

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:)
)
SES AMERICOM, Inc.)
)
Petition for Declaratory Ruling)
To Serve the U.S. Market Using)
BSS Spectrum from the 105.5° W.L.)
Orbital Location)

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

PETITION FOR DECLARATORY RULING

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PETITION FOR DECLARATORY RULING

SES AMERICOM, Inc. (“SES AMERICOM”) hereby submits this Petition for Declaratory Ruling (the “Petition”) to the Federal Communications Commission (the “FCC” or “Commission”), pursuant to Sections 1.2 and 25.137 of the Commission’s Rules,¹ requesting a declaratory ruling that it is in the public interest for SES AMERICOM to offer satellite capacity to third parties that will provide direct-to-home services to consumers in the United States and certain British Overseas Territories in the Caribbean.

SES AMERICOM will offer this capacity on a satellite licensed by the Government of Gibraltar at 105.5° West Longitude (“W.L.”). The satellite, to be known as AMC-14, will use the 12.2-12.7 GHz downlink frequencies and 17.3-17.8 GHz feeder link frequencies that have been allocated and are currently used in Region 2 (including

¹ 47 C.F.R. §§ 1.2, 25.137.

the United States) for direct broadcast satellite service (“DBS”).² The satellite will be located four and one-half degrees from each of two U.S. DBS orbital locations – 101° W.L. and 110° W.L.

SES AMERICOM proposes to provide a platform -- to be known as “AMERICOM2Home” -- for others to offer a broad range of innovative services to consumers in the United States and certain British Overseas Territories in the Caribbean.³ SES AMERICOM, while providing DBS transponder capacity to third parties, will not itself offer any retail or consumer services.

This proposal complies with the Commission’s procedural and substantive requirements for market entry by a foreign-licensed satellite, and is in the public interest. Accordingly, the Commission should act expeditiously to grant this Petition, which contains the information required for authority to provide service via a non-U.S. licensed satellite in accordance with Parts 25 and 100 of the Commission’s Rules. FCC Form 312 is included with this Petition.

I. BACKGROUND

SES AMERICOM. SES AMERICOM is a leading provider of satellite telecommunications services in the United States, and the developer of the AMERICOM2Home service. Headquartered in Princeton, New Jersey, SES

² The Commission defines a DBS service as one “in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.” 47 C.F.R. § 100.3.

³ The Caribbean territories are Bermuda, British Virgin Islands, Anguilla, Turks & Caicos, Montserrat and Cayman Islands. *See* Schedule 6 to the British Nationality Act 1981, as amended by the British Overseas Territories Act 2002.

AMERICOM provides U.S. and international services through a fleet of 16 geosynchronous communications satellites. For most of its 25 years of operation (first as RCA American Communications, Inc., then as GE American Communications, Inc.), SES AMERICOM has provided service to broadcast and cable television programmers, as well as to the federal government and others.

Commercial and educational television broadcasters use SES AMERICOM satellites both to distribute programming and for specialized satellite newsgathering services. SES AMERICOM established one of the first cable satellite “neighborhoods” more than 15 years ago, and today distributes cable TV programming for the major cable networks. Virtually every U.S. cable and DBS household receives some of its programming via the SES AMERICOM fleet. SES AMERICOM also has the largest satellite “neighborhood” for the U.S. radio programming industry.

Dozens of specialized satellite-based communication networks have been designed, installed, maintained and serviced by SES AMERICOM for governmental organizations as diverse as NASA, NOAA, and the U.S. Armed Forces, as well as for commercial customers such as the publishing industry.⁴ The company has a long history of providing communications for the telephone industry, and, more recently, SES AMERICOM's satellites have been used for data communications, VSAT services, and Internet transmissions. As the demand increases for high-quality telecommunications, SES AMERICOM's technical experts continue to develop innovative and cost-effective solutions to address customers' evolving needs.

⁴ Government services are provided by SES AMERICOM's wholly-owned subsidiary, AMERICOM Government Services, Inc.

SES AMERICOM's parent company, SES GLOBAL, also owns SES ASTRA, a leading European satellite provider. SES ASTRA provides transponder capacity and associated communications services through which television companies make available free and subscription television programming, as well as other services, to the general public and closed user groups across the European continent. SES AMERICOM intends to leverage fully the experience and knowledge of its parent company in launching and operating the AMC-14 satellite.

Gibraltar License. On March 6, 2002, the Government of Gibraltar issued an amended Teleport Facility Licence ("TFL") to SES Satellites (Gibraltar) Ltd. ("SES (Gibraltar)"), a company formed under the laws of Gibraltar,⁵ and a wholly-owned, indirect subsidiary of SES AMERICOM.⁶ The license authorizes SES (Gibraltar) to perform tracking, telemetry and control of the USAT-S1⁷ satellite at 105.5° W.L., operating in the DBS frequency bands, from its Gibraltar Satellite Control Centre. This amended license is valid for 25 years from the date of issue. As discussed in Section VIII.E below, Gibraltar does not issue space station licenses *per se*, and the TFL license is the only license that Gibraltar will issue for AMC-14 until just prior to launch.

⁵ As in the case of the Caribbean islands to be reached by the AMERICOM2Home platform, *see* note 3 *supra*, Gibraltar is a British Overseas Territory. *See* Schedule 6 to the British Nationality Act 1981, as amended by the British Overseas Territories Act 2002.

⁶ SES (Gibraltar) already had a Teleport Facility Licence from Gibraltar, pursuant to which SES (Gibraltar) operates AAP-1 at 108.2° E. The amendment was made to include TT&C authorization for a spacecraft located at 105.5° W.L.

⁷ USAT-S1 is the International Telecommunication Union ("ITU") designation for AMC-14. As discussed in Section III below, the United Kingdom, as the filing Administration for Gibraltar, submitted to the ITU the relevant Appendix 4 information for USAT-S1 in July 2001.

II. GENERAL SYSTEM DESCRIPTION

AMC-14 will deliver 32 DBS transponder channels using the 12.2-12.7 GHz DBS downlink band and the corresponding 17.3-17.8 GHz DBS feeder link band. The satellite will cover the continental United States, and will have spot beams that cover certain British Overseas Territories in the Caribbean. All transponders will have a bandwidth of 24 MHz. A full technical description of the satellite is contained in the Technical Appendix of Attachment 1.

Through AMC-14, the AMERICOM2Home system will carry the DBS offerings of various companies that own and/or distribute television programming and other content. Some of these content providers might choose, as is the case in Europe, to offer so-called "free-to-air" channels, supported by advertisers. Such channels are available at no charge to any consumer who purchases a relatively simple, relatively low-cost satellite antenna and related integrated receiver-decoder equipment.⁸ These consumers might also have available to them pay-per-view movies and sporting events. By upgrading the equipment package, the consumer could have access to bundles of program offerings for monthly charges, much as cable television and DBS are marketed today in the United States. Finally, a further upgrade (but still with the capability of a single antenna or "dish" on the roof) would allow both television reception and two-way Internet and broadband services, with integrated service offerings.⁹

⁸ In Europe, there are approximately 135 free-to-air television channels carried on SES ASTRA satellites.

⁹ The two-way Internet and broadband services would be provided via another SES AMERICOM satellite, operating in the Ku- or Ka-band at 105° W.L. SES AMERICOM presently operates a Ku-band satellite, and holds an FCC authorization

III. APPENDIX 30/30A

Background. Appendices 30 and 30A of the ITU Radio Regulations contain the Region 2 “BSS Plan” and associated “Feeder Link Plan” (collectively, the “Plans”) that assign orbital slots and frequencies for broadcasting-satellite service (“BSS”) satellites.¹⁰ Appendices 30 and 30A include procedures for modifying the Plans to accommodate systems whose technical parameters differ from the planned assignments. Due to the fact that the Plans for Region 2 (the ITU Region that includes the United States¹¹) were developed nearly 20 years ago,¹² and were based on analog technology that is now obsolete, modification of the Plans is required to accommodate

to launch and operate a Ka-band satellite, at this location. From the perspective of the consumer, the integration of the DBS television and satellite Internet services would be seamless, and would be accomplished using a single consumer terminal with two-way communications capabilities. For the Ku-band authorization *see* GTE Spacenet Corporation, 7 FCC Rcd 5569 (Dom. Facil. Div. 1992); 3 FCC Rcd 6986 (1988). The Commission approved the transfer of control of GTE Spacenet Corporation to GE AMERICOM in 1994. *See* Contel Corporation, 9 FCC Rcd 5775 (Com. Car. Bur. 1994). For the Ka-band authorization, *see* GE Americom Communications, Inc., 12 FCC Rcd 6475 (Int’l Bur., May 9, 1997), 16 FCC Rcd 2461 (Int’l Bur., Jan 31, 2001); 16 FCC Rcd 11038 (Int’l Bur., May 25, 2001).

¹⁰ “Broadcasting-satellite service” or “BSS” is the terminology used by the ITU and internationally to describe what is referred to in the United States as “direct broadcast satellite” or “DBS” service (*i.e.*, a satellite service, operated in the 12.2-12.7 GHz band, in which the satellite signals are intended for direct reception by the general public, *see* 47 C.F.R. § 100.3).

¹¹ *See* ITU Radio Regulations, Article S5, Section I.

¹² The Regional Administrative Radio Conference in 1983 (RARC-83) developed and adopted the Region 2 BSS and Feeder Link Plans. In 1985, at the World Administrative Radio Conference (WARC Orb-85), the Region 2 Plans were ratified internationally and became part of the ITU’s Radio Regulations. *See* Policies and Rules for the Direct Broadcast Satellite Service, NPRM, 13 FCC Rcd 6907, 6912, n.20 (1998) (“*Part 100 NPRM*”).

virtually all modern Region 2 BSS systems.¹³ As the Commission has noted, “[m]odifications of the BSS Plans are expected not only to continue, but also to increase, in the future.”¹⁴

Like other DBS satellites serving the U.S., the technical parameters of AMC-14 differ from those of the original Region 2 Plans. The United Kingdom, on behalf of Gibraltar, has submitted the relevant Appendix 4 information to modify the Region 2 Plans to include 105.5° W.L. frequency assignments reflecting the parameters of AMC-14.¹⁵

Annexes to each of Appendices 30 and 30A provide the methodology and criteria for determining whether a proposed modification might interfere with frequency assignments operated in accordance with the Plans (as well as other satellite systems or terrestrial systems using the same frequency bands). If certain criteria are met, the modification may be incorporated into the Plans without further negotiation. If the

¹³ The U.S. Administration has undertaken to modify the Plans many times, on behalf of U.S. space station applicants, not only in Region 2, but also in Regions 1 and 3. For example, in 1995, the United States filed for 12 modifications (two to the Region 2 Plans and ten to the Region 1 and 3 Plans) to provide BSS throughout the world. The U.S. actively pursued these modifications, culminating in the inclusion of five U.S. BSS systems in the Region 1 and 3 “List” for BSS downlinks. (The 2000 World Radiocommunication Conference (“WRC-2000”) separated the pre-WRC-2000 Plans for Regions 1 and 3 into Plans containing only original national Plan assignments and “Lists” containing successful modifications of the BSS and Feeder Link Plans. *See* WRC-2000 Final Acts, Istanbul, 8 May - 2 June 2000, 2nd edition (“WRC 2000 Final Acts”), Resolution 542, “Appendices S30 and S30A Region 1 and 3 Plans and Associated List of Additional Uses.”)

¹⁴ DirecTV Enterprises, Inc., 16 FCC Rcd 18530, 18533, n.17 (Int’l Bur., Oct. 26, 2001); EchoStar Satellite Corporation, 17 FCC Rcd 894, 897, n.21 (Int’l Bur., Jan. 16, 2002).

¹⁵ This information was received by the Radiocommunication Bureau of the ITU on July 27, 2001, but has not yet been published by the Bureau.

criteria are exceeded, the modification proceeds via coordination with the Administration(s) whose systems or services are identified as potentially affected. In this way, new satellite systems are routinely coordinated, and ultimately entered into the Plans (or Lists in the case of Regions 1 and 3).¹⁶ This procedure can and has been used, for example, for proposed modifications to extend the geographical coverage of a Plan assignment, or to introduce new Plan assignments, including at orbital spacings of less than nine degrees.¹⁷

Appendix 30/30A Analysis. The Commission's technical rules for DBS space stations consist of a requirement, contained in Section 100.21 of the Commission's rules, that an analysis be performed with respect to the sharing criteria in Annex 1 of Appendices 30 and 30A, in order to determine if the services of other Administrations, or other U.S. systems, are affected by the proposed system.¹⁸ SES AMERICOM has

¹⁶ Often, the backlog at the ITU Radiocommunication Bureau in processing and publishing information on BSS networks can significantly slow this process.

¹⁷ The Commission anticipated modifications involving smaller orbital spacing in the *Part 100 NPRM*, noting that the Commission's technical rules "need to take into account the fact that non-U.S. satellite systems using their Plan assignments to serve the U.S. could result in smaller satellite spacing than the current nine degree spacing between U.S. DBS orbital slots." *Part 100 NPRM*, 13 FCC Rcd at 6934. Indeed, other Administrations and organizations (Mexico, Canada and INTELSAT) have filed proposed modifications to serve the U.S. involving spacings smaller than nine degrees. For example, Mexico and Canada have filed modifications of their original Plan assignments, at 82° W.L. and 77° W.L. respectively, to extend coverage to the United States. In the recent application of Digital Broadband Applications Corp. ("DBAC") for authority for earth stations in the U.S. to access the 82° W.L. satellite, DBAC states that the satellite has completed coordination. See DBAC, File No. SES-LIC-20020109-00023 (filed Jan. 8, 2002), Exhibit C at 13.

¹⁸ As discussed below, Commission policy in this regard appears to be moving away from a strict requirement that Annex 1 criteria be met in all cases, to an interpretation allowing for coordination in accordance with Appendix 30/30A procedures in cases where the criteria are exceeded by reasonable amounts.

performed an interference analysis with respect to the sharing criteria in Annex 1 of Appendices 30 and 30A. One component of this analysis employs the MSPACE program¹⁹ to assess the potential impact of AMC-14 on all Region 2 Plan assignments and published U.S., Canadian and Mexican proposed modifications to the Plan, as well as several as-yet unpublished U.S. proposed modifications. Full details of the analysis and results are contained in the Technical Appendix of Attachment 1.

As discussed in the Technical Appendix, all of the criteria in Annex 1 of Appendices 30 and 30A are met for protection of other services, including all co-frequency services in other ITU Regions, and for protection of all Region 2 Plan assignments and published proposed modifications to the Region 2 Plans.²⁰ However, for certain as-yet unpublished proposed modifications to the Plans,²¹ AMC-14 will exceed by a small amount the permissible degradation in overall equivalent protection margin (“OEPM”) specified in Appendix 30 for determining whether an Administration’s Plan assignments or proposed modifications to the Plan are considered potentially “affected” by a proposed modification to the BSS Plan.²² Therefore, as the U.S. Administration and

¹⁹ MSPACE is the software program that the ITU uses to determine whether a proposed modification to the Plans affects other Plan assignment or previously-proposed modifications to the Plans.

²⁰ As discussed in the Technical Appendix, USAT-S1 meets all of the criteria to protect (1) terrestrial services in all three ITU Regions, (2) BSS and FSS in Regions 1 and 3, (3) BSS feeder links in Regions 1 and 3, (4) all BSS Plan assignments, including all successful modifications to the Plan, in Region 2, and (5) proposed modifications to the Region 2 Plan published prior to ITU filing of USAT-S1.

²¹ The AMC-14 parameters were designed to meet, and do meet, all of the Appendix 30 and 30A criteria for all Plan assignments and proposed modifications published by the date of the ITU filing. At that time, data on proposed modifications that had not been published was not available.

²² See ITU Radio Regulations, Appendix 30, Annex 1.

its licensees have done (or are in the process of doing) in many similar instances,²³ the United Kingdom Administration will coordinate with affected Administrations to resolve any interference issues. Given the small amount by which the levels are exceeded,²⁴ SES

²³ The Commission has received several applications for proposed systems that either exceed the Appendix 30/30A criteria or do not contain the analysis necessary to determine compliance with the criteria, and has licensed at least three such proposed systems, apparently prior to full coordination. In the Commission's authorizations of the DirecTV 4S and EchoStar 6 satellites, the Commission noted in both cases that the ITU criteria were exceeded at certain test points, but stated simply that in such cases the licensees must coordinate to obtain entry into the Plans. DirecTV Enterprises, Inc., 16 FCC Rcd 18530, 18532 (Int'l Bur., Oct. 26, 2001); EchoStar Satellite Corporation, 15 FCC Rcd 23636, 23640-1 (Int'l Bur., Nov. 27, 2000). Furthermore, it appears from the public record that EchoStar 7 was licensed before the necessary Appendix 30/30A studies were completed. In that case as well, the Commission stated that "[I]f the limits of Annex 1 [of Appendix 30 or 30A] are exceeded, the system must be coordinated with the affected systems or services." EchoStar Satellite Corporation, 17 FCC Rcd 894, 897 (Int'l Bur., Jan. 16, 2002). *See also* Application of EchoStar Satellite Corporation for Minor Modification of DBS Authorization, Launch and Operation Authority for EchoStar 7, File Nos. SAT-MOD-20010810-00071, SAT-A/O-20010810-00073, Technical Annex at 10, Appendix 3 to Technical Annex at 1 (filed August 10, 2001).

In the *Part 100 NPRM*, the Commission states: "We believe it will be possible to obtain approval from affected administration(s) for DBS systems proposed by our licensees that exceed the technical limits contained in Annex 1 [of Appendices 30 and 30A]." For this reason, the Commission proposed not to require applicants to meet these limits, and "to consider systems that exceed such limits, if there are reasonable assurances that the agreement of the affected administrations can be obtained." This could be shown, for example, by a demonstration that the effect on the foreign system(s) is negligible. *Part 100 NPRM*, 13 FCC Rcd at 6932.

²⁴ As discussed above, the Region 2 Plans are now nearly 20 years old, and many of the provisions of Appendices 30 and 30A are substantially out-of-date. In particular, the developers of the Plans assumed use of analog carriers. The transition to digital carriers means, for example, that much lower protection ratios are required to protect modern satellites. When WRC-2000 updated the Plans for Regions 1 and 3 and their technical parameters to take into account systems using digital modulation, the protection ratio was reduced to 21 dB, as compared to the 28 dB figure still used for Region 2. *See* WRC 2000 Final Acts, Resolution 542, "Appendices S30 and S30A Region 1 and 3 Plans and Associated List of Additional Uses."

AMERICOM expects that it will be able to reach successful agreements with affected Administrations.²⁵

IV. APPLICANT QUALIFICATION

SES AMERICOM is a fully qualified Commission licensee. The Commission does not apply the financial requirements of Section 25.140 of its Rules to DBS applications.²⁶

V. TYPE OF OPERATIONS

SES AMERICOM intends to operate AMC-14 on a non-broadcast, non-common carrier basis. SES AMERICOM will provide transponder capacity – through negotiated, individualized transactions – to third parties that will, in turn, use that capacity to provide service directly to the general public.

²⁵ As noted above, the Commission has proposed to delete provisions in Section 100.21 that prohibit applicants from exceeding the technical limits contained in Annex 1 of each of Appendices 30 and 30A. *Part 100 NPRM*, 13 FCC Rcd at 6932. In the event that a waiver of Section 100.21 is nonetheless deemed necessary for the Commission to grant the instant Petition prior to the conclusion of the necessary coordination agreements, SES AMERICOM requests that the Commission grant such a waiver, consistent with its prior practices. *See EchoStar Satellite Corporation*, 15 FCC Rcd 23636, 23641, (Int'l Bur., Nov. 27, 2000) (in which the International Bureau waived Section 100.21 because the amount by which EchoStar exceeded the BSS Plan criteria was minimal, and in any case, EchoStar would need to coordinate with the affected Administrations to resolve any interference issues). *See also* note 23 *supra*.

²⁶ *See Part 100 NPRM*, 13 FCC Rcd at 6922. If the Commission were to apply those rules to the instant Petition, SES AMERICOM can show that it has current assets and operating income that are more than sufficient to meet the costs of constructing, launching and operating AMC-14 for one year, as such costs are set out in Section VII below. *See generally*, www.ses-global.com.

VI. SCHEDULE

SES AMERICOM intends to commence spacecraft construction promptly after receipt of the declaratory ruling sought in this Petition. If this ruling is issued during 2002, AMC-14 could be launched as early as 2004.

Notwithstanding SES AMERICOM's intentions in this regard, SES AMERICOM requests that – if milestone dates are deemed necessary in this instance – SES AMERICOM be subject to the same milestones as FCC DBS satellite licensees.

VII. SYSTEM COSTS

The capital expenditure for the space segment is projected to be approximately \$ 325 million, which includes the construction cost of the spacecraft, launch services, and insurance. First year operating costs are estimated to be approximately \$ 6.5 million.

VIII. GRANT OF THIS PETITION IS IN THE PUBLIC INTEREST.

In its *DISCO II Order*, the Commission decided to permit foreign-licensed satellites to provide services in the U.S. market, provided that certain conditions are met.²⁷ According to the Commission: “Providing opportunities for foreign-licensed satellites to deliver services in this country should bring U.S. consumers the benefit of enhanced competition and afford greater opportunities for U.S. companies to enter

²⁷ Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, 12 FCC Rcd 24094 (1997) (“*DISCO II Order*”).

previously closed foreign markets, thereby stimulating a more competitive global satellite services market.”²⁸

DISCO II set up two mechanisms for seeking Commission authority to serve the U.S. market – a letter of intent to participate in a processing round, and an earth station application for satellites that are launched and operating.²⁹ In the *DISCO II Reconsideration Order*, the Commission stated that non-U.S. satellite operators could also access the U.S. market by filing a petition for a declaratory ruling.³⁰ A petition, the FCC decided, must be accompanied by the same documentation that would accompany an application for a U.S. satellite license.³¹

In this case, a petition for declaratory ruling is the most appropriate means for SES AMERICOM to confirm -- prior to undertaking the substantial expense of designing, constructing and launching a satellite -- that the satellite will be able to serve the U.S. market. SES AMERICOM believes that this Petition meets all of the Commission’s requirements for a declaratory ruling, and that grant of the Petition will serve the public interest.³²

²⁸ *Id.* at 24099.

²⁹ *Id.* at 24174.

³⁰ Amendment of the Commission’s Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, 15 FCC Rcd 7207, 7212 (1999) (“*DISCO II Reconsideration Order*”).

³¹ *Id.* at 7212.

³² If additional applications are filed to operate from the same location with the same frequencies and the FCC decides to initiate a processing round, SES AMERICOM requests that the Commission treat this Petition as a letter of intent pursuant to *DISCO II*. However, because of the U.K. priority in BSS at the 105.5° W.L. location, SES AMERICOM believes that a processing round is neither necessary nor appropriate.

A. AMERICOM2Home Will Provide More Choices for Consumers.

Permitting SES AMERICOM to offer its proposed DBS platform will serve the public interest by allowing its customers to offer innovative television and information services, in direct competition with the incumbent U.S. DBS and direct-to-home (“DTH”) providers and cable television operators. This competition will result in more choices and will encourage lower prices for consumers, who in most U.S. markets have just three choices (and in many markets only two) for multichannel video programming distribution (“MVPD”) service. In addition, the AMERICOM2Home platform will allow SES AMERICOM’s customers to make available (through another satellite at 105° W.L.) to U.S. consumers advanced, two-way, always-on broadband Internet access, in competition with satellite Internet, cable modem, and digital subscriber line (“DSL”) services, at a higher quality and with more affordable prices than the high-speed satellite Internet services available today.³³

The range of consumer choices distributed via the AMERICOM2Home platform will also be broadened as a result of an array of customizing features. SES AMERICOM believes that content owners and direct-to-home service providers will take full advantage of the availability of the AMERICOM2Home platform to offer a panoply of uniquely packaged programming designed to appeal to groups with varying interests. Consumers will, for example, be able to purchase packages of foreign language programming, sports programming and other information services, without necessarily purchasing other channels that are not desired. Because consumers will be able to pick

³³ As discussed above, *see* note 9 *supra*, the Ku- and Ka-band satellites are licensed by the FCC to SES AMERICOM. The provision of DBS television services is, SES AMERICOM believes, critical to succeeding with the marketing of satellite-delivered Internet services to U.S. residences.

and choose among channel offerings from different content providers, consumers will be able to customize programming combinations to fit their unique needs.

B. AMERICOM2Home Will Provide Alternative Distribution Channels for Content Owners.

Content owners seeking additional outlets for their programming will also benefit from the availability of the AMERICOM2Home platform; they will not be dependent for carriage on the large cable operators and the existing DBS/DTH providers, but instead will be able to offer their content directly to consumers at affordable prices. Start-up television channels and niche channels, which today must convince one or more of the handful of large MVPD providers to carry channels that may have a small or narrow audience reach, will have another, quite attractive option with AMERICOM2Home: to lease a transponder (or part of one) on AMC-14, and then to earn revenues by sales to advertisers and/or AMERICOM2Home users. Content owners will also be able to enter into joint marketing arrangements with each other, in order to offer the public various combinations of content. This increase in the options available to content providers, and through them to the viewing public, is clearly in the public interest.

C. The Proposed Service Enhances Spectrum Efficiency.

AMERICOM2Home will take advantage of DBS spectrum that is currently under-used in the United States. U.S. DBS satellites currently employ nine-degree spacing to avoid interference between systems. However, studies indicate that the AMC-14 satellite, when located at 105.5° W.L., mid-way between U.S. DBS satellites

operating at 101° W.L. and 110° W.L., can be coordinated to co-exist with those satellites.³⁴

As detailed in Section III above, nine-degree spacing for U.S. DBS satellites was established in the early 1980's as a result of the ITU Region 2 BSS planning process. At the time, given the state of the art in satellite antenna design, and assuming the use of analog technologies, it was believed that such separation was necessary to prevent harmful interference.³⁵ With advances in satellite technology and the move to digital carriers, however, nine-degree spacing is not critical in all cases to the avoidance of interference. It can now limit unnecessarily the available DBS slots, thereby preventing potential competitors to the incumbent U.S. DBS operators from entering the market. Accordingly, the Commission should promote the public interest by permitting the use of the BSS spectrum at 105.5° W.L. in the manner proposed by SES AMERICOM.

D. The ECO-SAT Test is Satisfied.

Grant of this Petition is consistent with the Commission's ECO-Sat test. This test, articulated in the *DISCO II Order*, applies to applications to provide DBS service via non-U.S.-licensed satellites. The Commission looks at whether U.S.-licensed satellites have "effective competitive opportunities" in the relevant foreign markets to provide the same satellite service that is being proposed.³⁶ The relevant foreign markets

³⁴ See Technical Appendix at 5 and Annex B.

³⁵ It was also believed at the time, for example, that it was technically infeasible to cover CONUS with a single satellite, an assumption that has since been proven incorrect.

³⁶ *DISCO II Order*, 12 FCC Rcd at 24134.

are (i) the market of the authority licensing the satellite and (ii) the markets in which communications with the U.S. earth stations will originate or terminate.³⁷ The Commission looks at whether there are *de jure* barriers to entry for U.S. satellite operators and whether *de facto* barriers exist.³⁸

In this case, the relevant markets are Gibraltar, the licensing authority, and certain islands in the Caribbean,³⁹ whose nationals will have the opportunity to receive service provided via the AMERICOM2Home platform. The relevant service is DBS and the related provision of satellite signals direct-to-home (“DTH”).⁴⁰

As noted above, Gibraltar and the relevant Caribbean islands are British Overseas Territories.⁴¹ This means that the United Kingdom is responsible for the external relations of its territories while each territory is responsible for domestic law.⁴² The telecommunications regulatory framework is in various stages of development in these territories. Gibraltar and Bermuda each have their own telecommunications regulatory body: the Gibraltar Regulatory Authority, and the Telecommunications Commission in the case of Bermuda. The British Virgin Islands (“BVI”) and the

³⁷ See 47 C.F.R. 25.137(a)(2).

³⁸ *DISCO II Order*, 12 FCC Rcd at 24128.

³⁹ See note 3 *supra* for a list of these islands.

⁴⁰ See *DISCO II Order*, 12 FCC Rcd at 24134 (specifying DTH (including DBS) as a service category for applying the ECO-Sat test).

⁴¹ See notes 3 and 5 *supra*.

⁴² Under the Colonial Laws Validity Act 1865 of the United Kingdom, the local legislative body of a British Overseas Territory is empowered to make laws for the “peace, order and good government” for that territory only. This is subject to a presumption that it cannot have extra-territorial effect. This explains why Gibraltar

Cayman Islands currently regulate through their respective communications ministries. Thus, this Petition will demonstrate that Gibraltar, Bermuda, the Cayman Islands and the BVI satisfy the ECO-Sat test.⁴³

Gibraltar. There are no *de jure* or *de facto* barriers in Gibraltar to U.S. satellite operators wishing to provide DBS/DTH service. Attachment 2 contains a letter from the Chief Executive of the Gibraltar Regulatory Authority attesting to the ability of U.S. satellite operators to provide these services in Gibraltar.⁴⁴ As explained in that letter, “[a] satellite operator is not required to obtain a licence from the Gibraltar Regulatory Authority in order to provide capacity to others who provide programming to consumers in Gibraltar.”⁴⁵ The letter goes on to explain that “U.S. operators would receive the same treatment as any European operator in this respect,” and that therefore, “a U.S. satellite operator may provide capacity to Direct-to-Home providers seeking to offer services in Gibraltar.”⁴⁶ In sum, “this market in Gibraltar is completely open to U.S. satellite operators.”⁴⁷

can license the satellite operations of SES Gibraltar, but the United Kingdom is responsible for notifying the filing for the satellite network to the ITU.

⁴³ This Petition will not address the markets in Monserrat, Anguilla and the Turks and Caicos. They have an aggregate population of about 30,000, and no information was available about the telecommunications markets in those islands.

⁴⁴ Letter from Paul J. Canessa, Chief Executive, Gibraltar Regulatory Authority, to Donald Abelson, Chief, International Division, Federal Communications Commission, dated April 22, 2002.

⁴⁵ *Id.* at 1.

⁴⁶ *Id.* at 1-2.

⁴⁷ *Id.* at 1.

The Caribbean Islands. There are no regulatory barriers in Bermuda, the BVI or the Cayman Islands to a U.S.-licensed operator leasing transponder capacity for use in the provision of direct-to-home services in those islands.⁴⁸ In Bermuda, the retail provider of the direct-to-home services (as distinguished from the satellite operator) would need a license because it is considered the provision of a commercial service.⁴⁹ The BVI would also probably require the retail provider of the direct-to-home service to obtain a license.

In sum, the provision of transmission capacity is permitted in Gibraltar and the relevant Caribbean islands. Thus, the ECO-Sat test is satisfied for both the home and route markets.

E. Gibraltar License.

For the reasons given below, SES (Gibraltar) has the necessary approval from Gibraltar to employ the orbital location and frequencies specified in this Petition, according to the technical parameters contained in the ITU Appendix 4 filing for USAT-S1. The foreign license requirement of Section 25.137 of the Commission's Rules is therefore satisfied.

⁴⁸ Applying the ECO-Sat test to these islands is problematic, because none of the three jurisdictions has relevant written regulations and none has previously received requests to provide DBS services. The information presented here is based on telephone conversations conducted on April 18, 2002, with Don Donovan, Telecommunications Consultant, Ministry of Telecommunications and ECommerce in Bermuda; Guy Malone, Telecommunications Officer, Telecommunications Unit of the Ministry of Communications and Works in the BVI; and Michael Kirom, Telecommunications Officer, Ministry of Planning, Communications, Works and Information Technology in the Cayman Islands.

⁴⁹ Under the Companies Act of 1981, the retail provider of DTH services would need to have at least 60% Bermudan ownership or would need an exemption from the Act from the Minister of Finance. Exemptions have been granted to the two international telecommunications providers – Cable & Wireless and TeleBermuda International.

The satellite licensing procedures followed by Gibraltar are substantially similar to the procedures followed by the United Kingdom. As the Commission knows, the United Kingdom does not issue satellite licenses *per se*.⁵⁰ Rather, the United Kingdom defers to and relies on the international frequency coordination process dictated by the ITU Radio Regulations. The TFL granted to SES (Gibraltar) is therefore the only authorization of any kind that Gibraltar will issue for communication with this satellite until just prior to launch.

Prior to launch, SES (Gibraltar) will require from the regulatory authorities of Gibraltar a license pursuant to the Outer Space Act (“OSA”), which authorizes the launch and operation of the satellite.⁵¹ This license is not a radiocommunication license, *i.e.*, it does not grant authority to use any particular orbital location or frequencies. Rather, this license procedure allows the regulatory authorities of Gibraltar to conduct “due diligence” of, for example, the relevant contracts with the satellite manufacturer, launch services provider, and insurer(s), in order to ensure that the satellite to be launched will be in accordance with Gibraltar’s international treaty obligations (particularly with respect to launch, maintenance in orbit, and disposal of satellites, and their associated risks), and that the satellite conforms to the relevant ITU filings for the satellite.⁵² Assuming these documents are in order, issuance of the

⁵⁰ See Pacific Century Group, Inc., 16 FCC Rcd 14356, 14361 (Int’l Bur., Aug. 1, 2001); U.S. Electroynamics, Inc. 14 FCC Rcd 9809, 9811 (Int’l Bur./OET, June 23, 1999).

⁵¹ See United Kingdom Outer Space Act 1986, as extended to Gibraltar by the Outer Space Act of 1986 (Gibraltar) Order 1996.

⁵² The OSA confers licensing powers to “secure compliance with the international obligations of the United Kingdom with respect to the launching and operation of space objects and the carrying on of other activities in outer space by persons

authority to SES (Gibraltar) to launch and operate the satellite is essentially automatic. Thus, the TFL, which SES (Gibraltar) has already been granted, and which specifies the orbital location and frequency bands, is the relevant license in the instant context.

F. Other Public Interest Concerns.

Under *DISCO II*, the Commission also considers national security, law enforcement, foreign policy and trade policy issues. SES AMERICOM does not believe that its Petition raises any of these issues.

IX. SECTION 100.53(b) WAIVER

Section 100.53(b) of the FCC Rules states that “those acquiring DBS authorizations after January 19, 1996 must provide DBS service to Alaska and Hawaii where such service is technically feasible from the acquired orbital location.”⁵³ SES AMERICOM desires, and expects eventually, to provide AMERICOM2Home coverage to Alaska and Hawaii, but coverage of those regions is not currently authorized by the Gibraltar license. As detailed below, this relates to potential interference concerns prior to the filing of USAT-S1 with the ITU, with the result that coverage of these states was not included in the ITU filing.⁵⁴

connected with this country.” OSA, preamble. More specifically, the Act requires a finding that a license “(a) will not jeopardise public health or the safety of persons or property, (b) will be consistent with the international obligations of the United Kingdom, and (c) will not impair the national security of the United Kingdom.” OSA, paragraph 4.(2).

⁵³ 47 C.F.R. § 100.53(b).

⁵⁴ As noted above, the ITU filing was designed to meet, and does meet, all ITU sharing criteria for all BSS plan assignments and proposed modifications published at the time of the filing. This posed significant constraints on the coverage achievable.

SES AMERICOM expects to resolve this issue in the near future. It hopes to be able to develop a plan to serve Alaska and Hawaii without causing unacceptable interference to other operators and BSS plan assignments. In the interim, should the Commission decide that the Alaska/Hawaii coverage requirement is applicable to AMC-14,⁵⁵ SES AMERICOM hereby respectfully requests that the Commission waive this requirement for the reasons set forth below.

Prior to submission of the information on USAT-S1 to the ITU, SES AMERICOM performed studies to determine the optimum EIRP contours to minimize interference to other BSS systems. These studies showed that it was difficult to protect test points for published U.S. BSS assignments in the northwestern United States to levels that would not require ITU coordination. Given the even lower EIRP of the original U.S. BSS systems in Alaska and Hawaii, it was evident that it would be even more difficult to not affect DBS services in Alaska and Hawaii. Therefore, coverage of

⁵⁵ It is not clear whether the geographic service requirement in Section 100.53(b) applies to foreign-licensed satellites. While the Commission generally requires foreign-licensed operators to meet the same technical, legal, and financial qualifications and general service rules that U.S.-licensed space station operators must meet to obtain a license, *DISCO II Order*, 12 FCC Rcd at 24100, 24160-8, to SES AMERICOM's knowledge, the Commission has never explicitly determined that the coverage requirement of Section 100.53(b) applies to such non-U.S. licensees. Moreover, in certain cases, there may be legitimate reasons why a foreign-licensed operator could not meet this rule, and its application in such cases could impede implementation of the Commission's market-opening commitments. Foreign regulatory bodies may not take steps in their licensing process, ITU filings, or international coordinations to ensure adherence to U.S. geographic coverage requirements, particularly in the face of countervailing considerations, such as interference issues. For example, the Commission could decide to allow greater permissible levels of interference to other U.S. systems to ensure that systems serving the United States can serve Alaska and Hawaii; however, a foreign regulator, seeking to minimize the coordination burden with U.S. systems, may not have the same options as the FCC, and thus may have to impose license restrictions that preclude Alaska/Hawaii service.

Alaska and Hawaii was not included in the United Kingdom's ITU filing for USAT-S1, and hence was not authorized by the Gibraltar license.

SES AMERICOM is nevertheless committed to offering AMERICOM2Home coverage to Alaska and Hawaii, if technically feasible from the 105.5° orbital location, and its engineers and consultants are working to devise a solution for such coverage. If service to Alaska and Hawaii proves possible, SES AMERICOM would attempt to amend the U.K. ITU filing and the Gibraltar license in this regard. SES AMERICOM would then amend its filings with the FCC.

On the other hand, in the event that these technical obstacles cannot be overcome, coverage of Alaska and Hawaii should be considered not "technically feasible from the acquired orbital location," and therefore the coverage requirement in Section 100.53(b) of the Rules would not apply. In either eventuality, SES AMERICOM would be in compliance with Commission Rules. In the meantime, however, the Commission should grant the instant Petition and waive the geographic coverage requirement, if applicable, until such time as SES AMERICOM is authorized by Gibraltar to offer coverage of Alaska and Hawaii, or until SES AMERICOM has shown to the Commission's satisfaction that such coverage is not technically feasible from the orbital location.

X. PETITIONER NAME AND CONTACT INFORMATION

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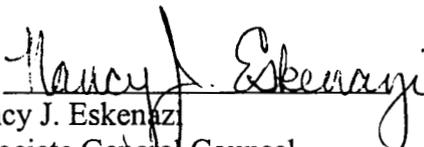
XI. CONCLUSION

For the above reasons, SES AMERICOM's proposal to offer satellite capacity for third-party direct-to-home services via a DBS satellite at 105.5° W.L. complies with all of the Commission's procedural and substantive requirements for entry by a foreign-licensed satellite, and is in the public interest. Accordingly, the Commission should act expeditiously to grant this Petition.

The undersigned hereby certifies that the statements made in this Petition are true, complete and correct to the best of her knowledge and belief and are made in good faith.

Respectfully Submitted,

SES AMERICOM, INC.

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April 25, 2002

Attachment 1

Technical Appendix

- Technical Description of USAT-S1/AMC-14
- ITU Appendix S4 Information for USAT-S1
- Analysis of USAT-S1 with respect to the sharing criteria in Annex 1 (mod WRC-2000) of Appendix 30
- Analysis of USAT-S1 with respect to the sharing criteria in Annex 1 (mod WRC-2000) of Appendix 30A

Technical Appendix

Technical Description of USAT-S1/AMC-14

General Description

The USAT-S1¹ satellite, to be located at 105.5° W.L., will deliver 32 DBS transponder channels using the 12.2-12.7 GHz BSS band and corresponding 17.3-17.8 GHz feeder link band. The satellite covers the continental United States, including spot beams that cover certain British Overseas Territories in the Caribbean. All transponders will have a bandwidth of 24 MHz.

Payload

The USAT-S1 satellite will have a downlink/transmit beam (“NG1”) that covers the area described above, and an uplink/receive beam (“NG1”) that covers the continental United States.² USAT-S1 operates in both right-hand circular polarization (“RHC”) and left-hand circular polarization (“LHC”), with odd-numbered transponders using LHC on the uplink and downlink, and the even-numbered transponders using RHC on the uplink and downlink.

Transmit beam NG1 EIRP performance is shown in Figure 1 of Annex A to this Appendix. The receive beam NG1 performance is shown in Figure 2 of Annex A. The transmit peak EIRP is 54 dBW and peak G/T is approximately 3 dB/K.

Frequency Plan

The following Tables provide the transponder center frequencies of each of the thirty-two 24 MHz channels. Table 1 provides the uplink center frequencies, while Table 2 provides the downlink center frequencies.

¹ USAT-S1 is the name of the ITU filing for AMC-14. The ITU name will be used throughout the remainder of the Technical Appendix and its Annexes.

² While the USAT-S1 ITU Appendix 4 information contained in the attached Annex A contains two downlink and two uplink beams, SES Americom is applying for service in the US from the NG1 uplink and downlink beams.

Table 1: Uplink Assigned Frequencies and Polarization

Channel Number	Center frequency	Polarization
1	17317	CL
2	17331.58	CR
3	17346.16	CL
4	17360.74	CR
5	17375.32	CL
6	17389.9	CR
7	17404.48	CL
8	17419.06	CR
9	17433.64	CL
10	17448.22	CR
11	17462.8	CL
12	17477.38	CR
13	17491.96	CL
14	17506.54	CR
15	17521.12	CL
16	17535.7	CR
17	17550.28	CL
18	17564.86	CR
19	17579.44	CL
20	17594.02	CR
21	17608.6	CL
22	17623.18	CR
23	17637.76	CL
24	17652.34	CR
25	17666.92	CL
26	17681.5	CR
27	17696.08	CL
28	17710.66	CR
29	17725.24	CL
30	17739.82	CR
31	17754.4	CL
32	17768.98	CR

Table 2: Downlink Assigned Frequencies and Polarization

Channel Number	Center frequency	Polarization
1	12217	CL
2	12231.58	CR
3	12246.16	CL
4	12260.74	CR
5	12275.32	CL
6	12289.9	CR
7	12304.48	CL
8	12319.06	CR
9	12333.64	CL
10	12348.22	CR
11	12362.8	CL
12	12377.38	CR
13	12391.96	CL
14	12406.54	CR
15	12421.12	CL
16	12435.7	CR
17	12450.28	CL
18	12464.86	CR
19	12479.44	CL
20	12494.02	CR
21	12508.6	CL
22	12523.18	CR
23	12537.76	CL
24	12552.34	CR
25	12566.92	CL
26	12581.5	CR
27	12596.08	CL
28	12610.66	CR
29	12625.24	CL
30	12639.82	CR
31	12654.4	CL
32	12668.98	CR

System Operation

The satellite system will be used to distribute entertainment and news programming, as well data services, in digital DVB format. Consumer terminals will utilize receive antennas as small as 45 cm in diameter. Modulation of the digital carriers will be QPSK or 8PSK. The satellite will be designed for at least 15 years of operation.

TT&C

The USAT-S1 satellite and associated TT&C earth stations³ will have TT&C operations at the following frequencies:

Command (transfer orbit only):	14.401 GHz, 14.403 GHz or 17.798 GHz
Command (on station):	17.798 GHz
Telemetry:	12.204 GHz and 12.699 GHz

³ The TT&C earth stations will be located at one of SES Americom's existing TT&C facilities in the U.S. (Woodbine, MD; Grand Junction, Co; South Mountain, CA). The Satellite Control Center will be located in Gibraltar.

Representative Link Budget

Link budget for USAT-S1			
Data Rate	Mbps	27.647	27.647
Modulation		4PSK	4PSK
FEC		3/4	3/4
Outer Coding		188/204	188/204
Symbol Rate	Msp/s	20.000	20.000
Rolloff Factor		1.2	1.2
Allocated BW	MHz	24.000	24.000
Required Eb/No	DB	5.6	5.6
C/N Required	DB	7.0	7.0
Beam Peak EIRP	DBW	54.0	54.0
Downlink Location		Washington DC	Washington DC
Downlink Pattern Gain	DB	-1.0	-1.0
Downlink Path Loss	DB	206.2	206.2
Rainloss (99.8%)	DB	5.0	5.0
Pointing Error	DB	0.5	0.5
Receive Antenna Diameter	Cm	45.0	55.0
Receive Antenna G/T	dB/K	13.0	14.5
C/N Downlink	DB	9.9	11.4
Assumed C/I	DB	12.0	13.0
C/N system	DB	7.8	9.1
C/N Margin	DB	0.8	2.1

Detailed Technical Description

Annex A, attached to this Appendix, provides the ITU Appendix 4 information required by Appendix 30 to modify the Region 2 BSS Plan and that required by Appendix 30A to modify the Region 2 Feeder Link Plan. This information was submitted to the ITU by the UK administration, and received by the Radiocommunication Bureau (“BR”) on 7/27/01.

Analysis with respect to Section 100.21 of the FCC’s rules (Annex 1 of Appendices 30 and 30A)

Annex B, attached to this Appendix, provides analysis of USAT-S1 with respect to the sharing criteria in Annex 1 of Appendix 30. Annex C provides the corresponding analysis of USAT-S1 with respect to the sharing criteria in Annex 1 of Appendix 30A.

As shown in these Annexes, USAT-S1 meets all of the criteria to protect (1) terrestrial services in all three ITU Regions, (2) BSS and FSS in Regions 1 and 3, (3) BSS feeder links in Regions 1 and 3, (4) all BSS Plan assignments, including all successful modifications to the Plan, in Region 2 and (5) all proposed modifications to the Region 2 Plan published at the time USAT-S1 was filed at the ITU. USAT-S1 was designed to protect all Region 2 Plan assignments and published proposed modifications to the Plan. At the time the ITU filing was made, however, the ITU had not yet made publicly available the information on proposed modifications to the Plan that had not yet been processed and officially published by the BR. Since the time of the filing, the ITU has made information available on later filed proposed modifications to the Plan, and SES AMERICOM has performed a detailed MSPACE analysis of these filings. For certain channels and test points, the Appendix 30/30A criteria is exceeded by small amounts. SES AMERICOM, with the U.K. Administration, will coordinate with affected networks in accordance with Appendices 30 and 30A.

Annex A to Technical Appendix

ITU Appendix 4 information for USAT-S1⁴

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
A	General characteristics to be provided for the satellite network or the earth or radio astronomy station		
A.1	Identity of the satellite network or the earth or radio astronomy station		
A.1.a	Identity of a satellite network	USAT-S1	USAT-S1
A.1.c	Country and beam identification	NF1 NG1	NEW NG1
A.1.f	Country symbol of the notifying administration. In the case of advance information, give the symbol of the administration or the symbols of the administrations in the group submitting the advance information on the satellite network.	G	G
A.2	Date of bringing into use		
A.2.a	The date (actual or foreseen, as appropriate) of bringing the frequency assignment (new or modified) into use. The date of bringing into use denotes the date at which the frequency assignment is brought into regular operation to provide the published radiocommunication	June 20, 2006	June 20, 2006

⁴ Same data elements as previously requested in Annex 2 to Appendices 30 & 30A. This format is provided in ITU-R Circular letters CR/144 and CR/158.

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	service with the technical parameters within the technical characteristics notified to the Bureau. Whenever the assignment is changed in any of its basic characteristics (except in the case of a change in § A.1 a)), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).		
A.3	Operating administration or agency	091	091
A.4	Orbital information		
A.4.a	For the case of a space station onboard a GSO satellite:		
A.4.a.1	The nominal geographical longitude on the geostationary-satellite orbit	105.5°W	105.5°W
A.4.a.2	The planned longitudinal tolerance and inclination excursion	0.05°	0.05°
A.5	Coordination		
A.6	Agreements		
A.7	Earth station site characteristics		
	For a specific earth station:		
A.7.a	The horizon elevation angle in degrees for each azimuth around the earth station	Not Applicable for Typical Earth Station	Not Applicable for Typical Earth Station
A.7.e	The altitude (metres) of the antenna above mean sea level	Not Applicable for Typical Earth Station	Not Applicable for Typical Earth Stations
A.11	Regular hours of operation (UTC)	24 Hours	24 Hours
A.12	Range of automatic gain control	0 dB	0 dB
B.	Characteristics to be		

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	provided for each satellite antenna beam or each earth or radio astronomy station antenna		
B.1	The designation of the satellite antenna beam and, if appropriate, an indication as to whether it is a steerable or reconfigurable antenna beam. The designation shall be a character code, and the last character shall be an "R" for steerable or reconfigurable beams.	NF1 NG1	NEW NG1
B.3	Geostationary space station antenna characteristics		
B.3.d	The pointing accuracy of the antenna	.05°	.05°

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
B.3.g	For the case of a space station submitted in accordance with Appendix S30, Appendix S30A or Appendix S30B:		
B.3.g.1	Co-polar gain of the antenna in the direction of maximum radiation referred to an isotropic radiator (dBi) and cross-polar gain of the antenna in the case of a beam of other than elliptical shape	NG1 and NF1 Copolar gain = 35.1 dBi NG1 and NF1 Xpolar gain = -3.0 dBi	NEW and NG1 copolar gain = 32.1 dBi NEW and NG1 Xpolar gain = -2.0 dBi
B.3.g.5	for beams of other than elliptical shape: - co-polar and cross-polar gain contours plotted on a map of the Earth's surface, preferably in a radial projection from the satellite on to a plane perpendicular to the line from the centre of the Earth to the satellite. The isotropic or absolute gain shall be indicated at each contour which corresponds to a decrease in gain of 2, 4, 6, 10 or 20 dB and thereafter at 10 dB intervals down to a value of 0 dB relative to an isotropic radiator. Whenever practicable, a numerical equation or table providing the	See Figures 1 and 2 for Beam NG1. ⁵	See Figures 3 and 4 for Beam NG1.

⁵ For brevity, gain contours for the two beams (NF1 and NEW) that SES AMERICOM is not applying for service in the U.S. with this Petition, are not provided here.

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	<p>necessary information to allow the gain contours to be plotted should be provided;</p> <ul style="list-style-type: none"> - beam aim point longitude and latitude; - where a steerable beam (see No. S1.191) is used, the maximum antenna gain and the effective antenna gain contours (see No. S1.176); these contours shall be provided as defined above; - for an assignment in the bands 14.5-14.8 GHz or 17.7-18.1 GHz, the isotropic gain in the direction of those parts of the geostationary-satellite orbit which are not obstructed by the Earth. Use a diagram to show estimated isotropic gain relative to orbit longitude; 		
C	Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth or radio astronomy station antenna		
C.2	Assigned frequency (frequencies)		
C.2.a	The assigned frequency (frequencies), as defined in No. S1.148, in kHz up to 28 000 kHz inclusive, in MHz above 28 000 kHz to 10 500 MHz inclusive and in GHz above 10 500 MHz.	See Table 1b	See Table 1a

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	<p>Alternatively, in the case of a space station submitted in accordance with Appendix S30, the channel number.</p> <p>If the basic characteristics are identical, with the exception of the assigned frequency, a list of frequency assignments may be provided.</p>		
C.3	Assigned frequency band		
C.3.a	The bandwidth of the assigned frequency band in kHz (see No. S1.147).	All channels 24000 kHz	All channels 24000 kHz
C.4	<p>Class of station(s) and nature of service</p> <p>The class of station and nature of service performed, using the symbols shown in the Preface to the International Frequency List.</p>	EB, CP	EB, CP
C.5	Receiving system noise temperature		
C.5.a	In the case of a space station, the lowest total receiving system noise temperature, in kelvins, referred to the output of the receiving antenna of the space station.	NA	900°K
C.6	<p>Polarization</p> <p>The type of polarization and, if appropriate, sense of polarization of the antenna. In the case of circular polarization, indicate the direction of polarization (see Nos. S1.154 and S1.155). In the case of linear polarization, indicate the angle (degrees) measured counter-clockwise in a plane</p>	See Table 1b	See Table 1a

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	normal to the beam axis from the equatorial plane to the electric vector of the waves as seen from the satellite. In the case of a space station submitted in accordance with Appendix S30 or S30A, this indication is to be in the direction of the boresight or the aim point or as defined in § B.3 g) 4) and § B.3 g) 5), respectively		
C.7	Class of emission, necessary bandwidth and description of the transmission In accordance with Article S2 and Appendix S1:		
C.7.a	The class of emission and the necessary bandwidth	24M0G7W--	24M7G7W--
C.8	Power characteristics of the transmission		
C.8.h	In the case of a space station submitted in accordance with Appendix S30, the power supplied to the antenna (dBW) and the maximum power density per Hz supplied to the antenna (dB(W/Hz)), averaged over the worst 5 MHz, 4 kHz and 27 MHz, and averaged over the worst 40 kHz in the case of Region 2.	See Table 2	

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
C.8.i	<p>In the case of an earth station submitted in accordance with Appendix S30A:</p> <ul style="list-style-type: none"> - total transmitting power (dBW) in the assigned frequency band supplied to the input of the antenna; - for the band 17.3-18.1 GHz, the maximum power density per Hz (dB(W/Hz)) supplied to the input of the antenna averaged over the worst 1 MHz band; - for the band 14.5-14.8 GHz, the maximum power density per Hz (dB(W/Hz)) supplied to the input of the antenna averaged over the worst 4 kHz band; - for the band 17.3-17.8 GHz, the maximum power density per Hz (dB(W/Hz)) supplied to the input of the antenna averaged over the total RF bandwidth (24 MHz for Region 2 or 27 MHz for Regions 1 and 3); - range of power control, expressed in dB, above the transmitting power indicated above (if power control is used). 		See Table 3
C.9	Information on modulation characteristics		
C.9.b	In the case of a space station submitted in accordance with Appendix S30 or the case		

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	of a space station submitted in accordance with Appendix S30A:		
C.9.b.1	Type of modulation	4PSK	4PSK
C.9.b.2	Pre-emphasis characteristics	NA	NA
C.9.b.3	TV standard	DVB	DVB
C.9.b.4	Sound-broadcasting characteristics	Digital	Digital
C.9.b.5	Frequency deviation	NA	NA
C.9.b.6	Composition of the baseband	NA	NA
C.9.b.7	Type of multiplexing of the video and sound signals	TDM	TDM
C.9.b.8	Energy dispersal characteristics	NA	NA
C.9.b.9	In the case of a digital modulation, the effective and transmitted bit rate (Mbits/s) and symbol rate (Msymbols/s)	Effective 36, Transmit 48	Effective 36, Transmit 48
C.9.b.10	Roll-off factor of the filter of the receiver	In accordance with BO-1293-1	In accordance with BO-1293-1
C.10	Type and identity of the associated station(s) The associated station may be another space station, a typical earth station of the network or a specific earth station.		
C.10.b	For a specific associated earth station, the identity of the earth station and the geographical coordinates of the antenna site.	NA	NA
C.10.c	For an associated earth station (whether specific or typical):	Typical	Typical
C.10.c.2	The isotropic gain (dBi) of the antenna in the direction of maximum radiation (see No. S1.160)	See Table 4	65 dBi

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
C.10.c.3	The beamwidth in degrees between the half power points (describe in detail if not symmetrical)	See Table 4	0.1°
C.10.c.4	Either the measured radiation pattern of the antenna or the reference radiation pattern	See Table 4	R2TES
C.10.c.6	The equivalent antenna diameter (metres)	See Table 4	13 meters
C.11	Service area		
C.11.b	<p>In the case of a space station submitted in accordance with Appendices S30, S30A or S30B (for both transmitting and receiving space stations):</p> <ul style="list-style-type: none"> - a set of a maximum of twenty test points; and - a service area contour on the surface of the Earth or a service area defined by a minimum elevation angle in degrees. 	See Table 5	See Table 5
C.15	Description of the group(s) required in the case of non-simultaneous emissions	Beams NG1 and NF1 are grouped.	Beams NG1 and NEW are grouped.
D.1	<p>Connection between Earth-to-space and space-to-Earth frequencies in the network</p> <p>The connection between uplink and downlink frequency assignments in each transponder for each intended combination of receiving and transmitting</p>	See Table 6	See Table 6

1	2	3	4
Annex 2A to Appendix S4 Data Item Nb.	Data Item Label	APS30	APS30A
	beams.		

Table 1a: Uplink Assigned Frequencies, Polarization and Uplink Power Characteristics

Channel Number	Center frequency	Polarization	Uplink Power characteristics for beam NEW. See Table 3 Row #:	Uplink Power characteristics for beam NG1. See Table 3 Row #:
1	17317	CL	3	1
2	17331.58	CR	3	3
3	17346.16	CL	3	1
4	17360.74	CR	4	4
5	17375.32	CL	3	3
6	17389.9	CR	4	4
7	17404.48	CL	3	3
8	17419.06	CR	4	4
9	17433.64	CL	3	3
10	17448.22	CR	4	4
11	17462.8	CL	3	3
12	17477.38	CR	4	4
13	17491.96	CL	3	3
14	17506.54	CR	4	4
15	17521.12	CL	3	3
16	17535.7	CR	4	4
17	17550.28	CL	4	3
18	17564.86	CR	4	4
19	17579.44	CL	4	2
20	17594.02	CR	4	4
21	17608.6	CL	4	2
22	17623.18	CR	4	4
23	17637.76	CL	4	2
24	17652.34	CR	4	4
25	17666.92	CL	4	2
26	17681.5	CR	4	4
27	17696.08	CL	4	2
28	17710.66	CR	4	4
29	17725.24	CL	4	2
30	17739.82	CR	4	4
31	17754.4	CL	4	3
32	17768.98	CR	4	4

Table 1b: Downlink Assigned Frequencies, Polarization and Downlink Power Characteristics

Channel Number	Center frequency	Polarization	Downlink Power characteristics for beam NF1. See Table 2 Row #:	Downlink Power characteristics for beam NG1. See Table 2 Row #:
1	12217	CL	4	2
2	12231.58	CR	1	1
3	12246.16	CL	4	2
4	12260.74	CR	4	3
5	12275.32	CL	4	2
6	12289.9	CR	1	1
7	12304.48	CL	2	2
8	12319.06	CR	4	3
9	12333.64	CL	4	2
10	12348.22	CR	1	1
11	12362.8	CL	2	2
12	12377.38	CR	4	3
13	12391.96	CL	4	2
14	12406.54	CR	1	1
15	12421.12	CL	2	2
16	12435.7	CR	4	2
17	12450.28	CL	4	2
18	12464.86	CR	4	4
19	12479.44	CL	4	4
20	12494.02	CR	4	4
21	12508.6	CL	4	4
22	12523.18	CR	4	4
23	12537.76	CL	4	4
24	12552.34	CR	4	4
25	12566.92	CL	4	4
26	12581.5	CR	4	4
27	12596.08	CL	4	4
28	12610.66	CR	4	4
29	12625.24	CL	4	4
30	12639.82	CR	4	4
31	12654.4	CL	4	4
32	12668.98	CR	4	4

Table 2: Downlink Power Characteristics

Row #	Total Power Supplied to the antenna in dBW	Maximum Power Density averaged over Worst 27 MHz, in dBW/Hz	Maximum Power Density in dBW averaged over Worst 5 MHz, in dBW/Hz	Maximum Power Density in dBW averaged over Worst 40 kHz, in dBW/Hz	Maximum Power Density in dBW averaged over Worst 4 kHz, in dBW/Hz
1	18.4	-55.4	-55.4	-55.4	-55.4
2	18.7	-55.1	-55.1	-55.1	-55.1
3	18.8	-55	-55	-55	-55
4	18.9	-54.9	-54.9	-54.9	-54.9
Note: The transponder bandwidth is 24 MHz and therefore the value given in column 2, Maximum Power Density averaged over Worst 27 MHz, is taken to be the same as the maximum power density over 24 MHz.					

Table 3: Uplink Power Characteristics

Row #	Total Power supplied to antenna	Maximum Power Density averaged over Worst 1 MHz, in dBW/Hz	Maximum Power Density averaged over Bandwidth, in dBW/Hz
1	17.3	-56.5	-56.5
2	17.5	-56.3	-56.3
3	18	-55.8	-55.8
4	19	-54.8	-54.8

Table 4: Downlink earth station receive antenna characteristics for both D/L beams NF1 and NG1

Antenna Maximum Diameter in meters	Maximum Gain in dBi	Reference antenna pattern	Half-power Beamwidth in degrees	Test point set for NF1 and NG1
0.45	34.4	DBLTVROI0001 ⁶	3.8	See Table 5
0.6	36.9	DBLTVROI0001	3	See Table 5
0.75	38.85	DBLTVROI0001	2.4	See Table 5
0.9	40.4	DBLTVROI0001	1.9	See Table 5
1.2	42.95	DBLTVROI0001	1.5	See Table 5

⁶ This reference antenna pattern is found in the reference manual for MSPACEg.

Table 5. Test point sets⁷

Table 5.1 Uplink beam NG1 and Downlink beam NG1 channels 1 to 32									
Test points for 45 cm antenna									
Latitude	43.94	43.77	43.44	41.77	37.11	32.11	33.27	30.61	34.11
Longitude	-116.6	-111.6	-84.53	-75.04	-77.04	-81.2	-87.19	-93.68	-103.5
Test points for 60 cm antenna									
Latitude	32.44	18.43	18.46	18.25	16.7	32.28	19.33	21.46	
Longitude	-112.3	-64.63	-64.4	-63	-62.16	-64.75	-81.25	-71.13	
Test points for 75 cm antenna									
Latitude	45.11	44.44	43.44	42.27	30.11	31.94	27.77	30.94	32.94
Longitude	-117.3	-107.7	-81.2	-73.05	-82.2	-87.52	-97.67	-110.1	-113.6
Test points for 90 cm antenna									
Latitude	47.94	50.11	46.94	45.61	44.44	25.72	26.31	26.31	31.76
Longitude	-118	-100.8	-83.03	-71.88	-69.05	-80.52	-97.75	-99.26	-114.4
Test points for 1.2 m antenna									
Latitude	46	44.4	41.8	26.76	25.2	26.7	32.3	32.9	47.9
Longitude	-71.3	-67.4	-70.5	-78.3	-80.8	-99.7	-116	-116.8	-123.6
Test points for 1.2 m antenna									
Latitude	49.4	18.43	18.46	18.25	16.7	32.28	19.33	21.46	
Longitude	-120.8	-64.63	-64.4	-63	-62.16	-64.75	-81.25	-71.13	

⁷ For each beam, the uplink and downlink test points are the same.

Table 5.2 Uplink beam NEW and Downlink beam NF1 channels 1 to 32										
Test points for 45 cm antenna										
Latitude	43.94	43.8	43.4	41.8	37.11	32.1	33.3	30.6	34.11	32.44
Longitude	-116.6	-112	-84.5	-75	-77	-81.2	-87.2	-94	-103.5	-112.3
Test points for 60 cm antenna										
Latitude	45.11	44.4	43.4	42.3	30.11	31.9	27.8	30.9	32.94	39.94
Longitude	-117.3	-108	-81.2	-73.1	-82.2	-87.5	-97.7	-110	-113.6	-117
Test points for 75 cm antenna										
Latitude	47.94	50.1	46.9	45.6	44.44	25.7	26.3	26.3	31.76	33.66
Longitude	-118	-101	-83	-71.9	-69.1	-80.5	-97.8	-99	-114.4	-115.7
Test points for 90 cm antenna										
Latitude	47.11	46.4	46.4	45.1	43.94	26.9	29.6	26.8	30.44	33.11
Longitude	-118.3	-93.3	-83.7	-75	-70.6	-81.3	-89.9	-98	-105.3	-115
Test points for 1.2 m antenna										
Latitude	46	44.4	41.8	26.8	25.2	26.7	32.3	32.9	47.9	49.4
Longitude	-71.3	-67.4	-70.5	-78.3	-80.8	-99.7	-116	-117	-123.6	-120.8

Table 6: Strapping Table

There are two cases:

- 1) Uplink beam NG1 strapped to downlink beam NG1
- 2) Uplink beam NEW strapped to downlink beam NF1

In both cases, the strapping is as follows:

Uplink channel	Downlink channel
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32

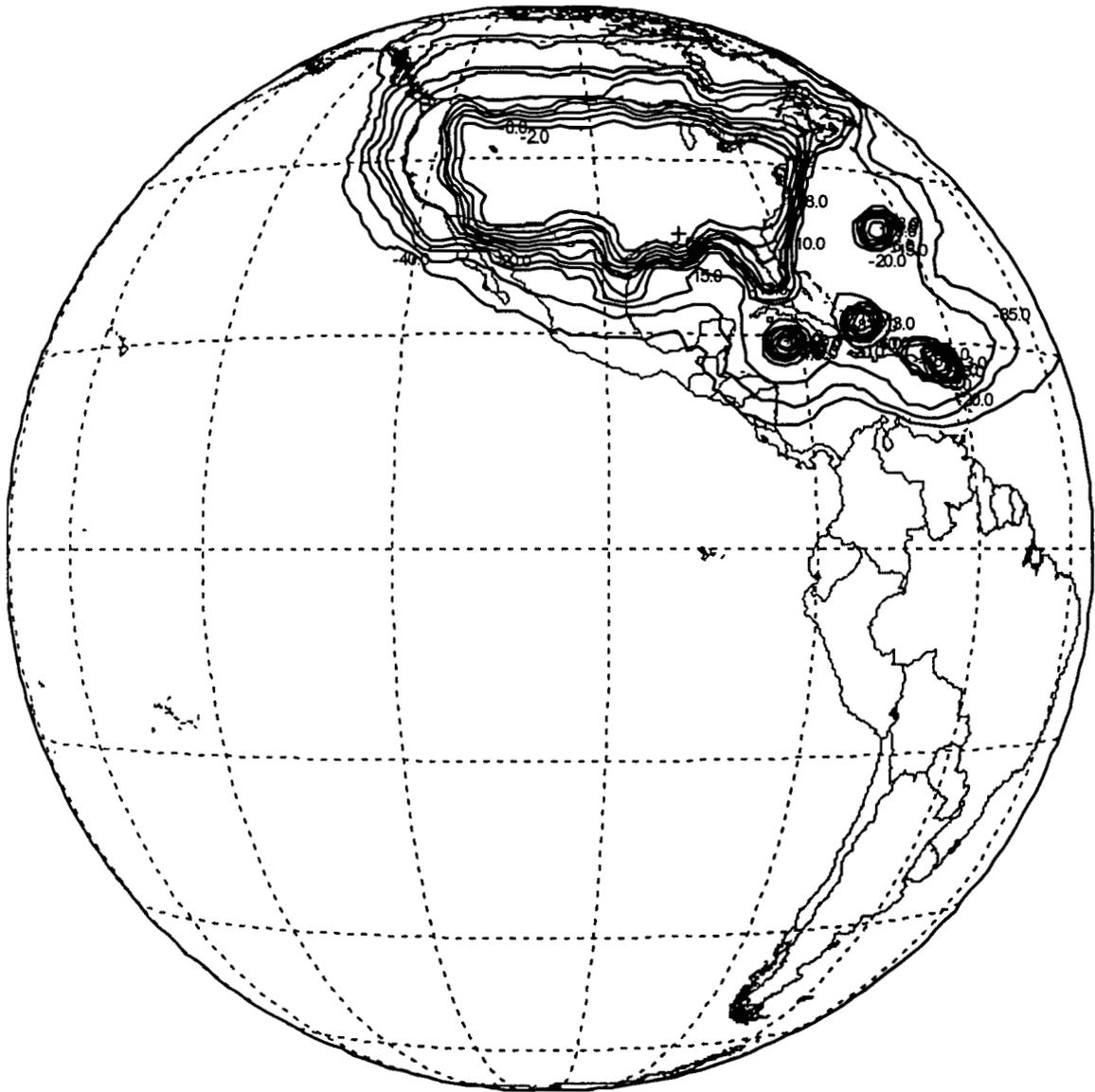


Figure 1. Beam NG1 Co-polar transmit satellite antenna gain contours (-2, -4, -6, -8, -10, -13, -15, -20, -25, -30, -35, -40 dB).

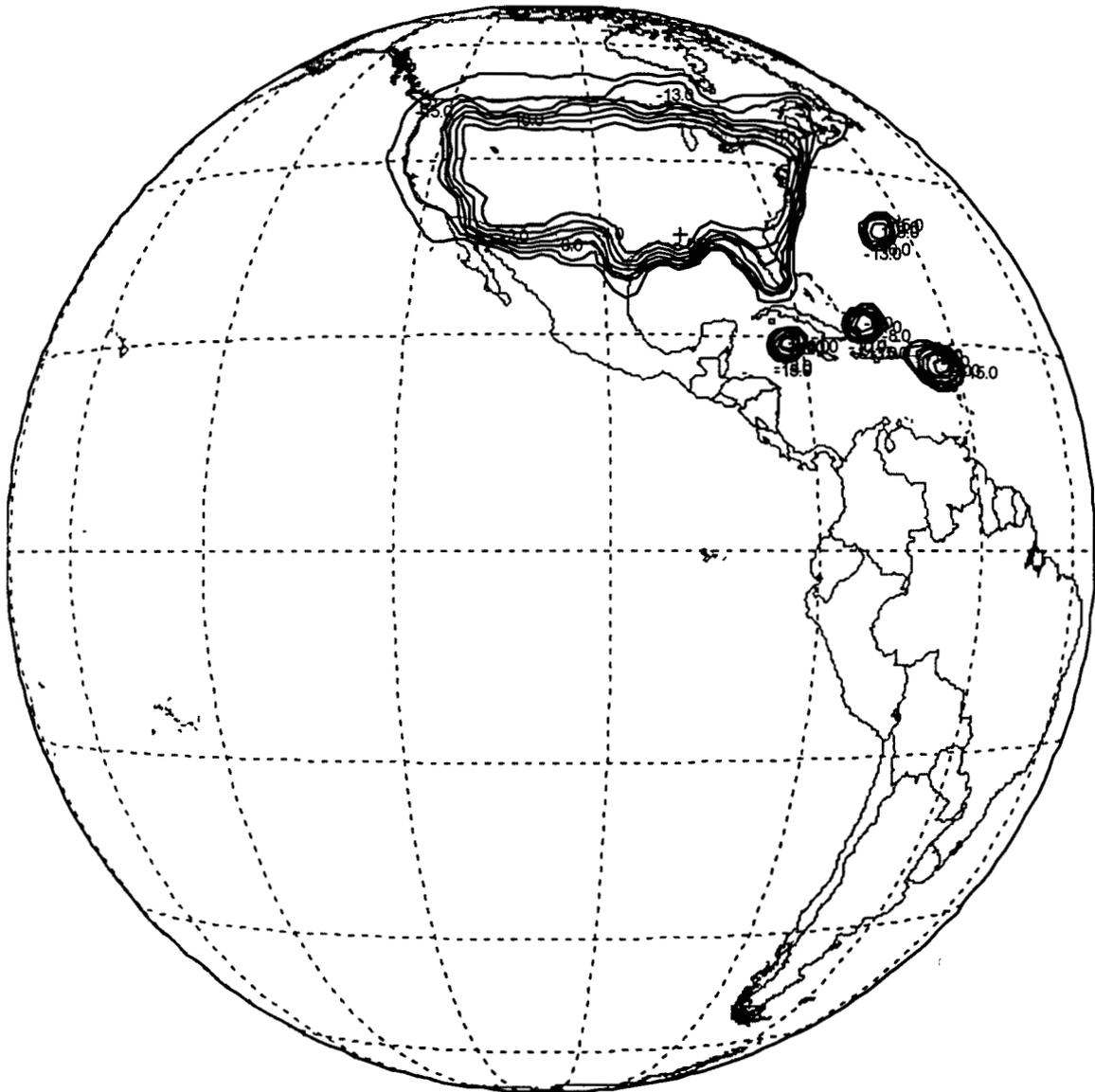


Figure 2. Beam NG1 Cross-polar transmit satellite antenna gain contours (-2, -4, -6, -8, -10, -13, -15 dB).

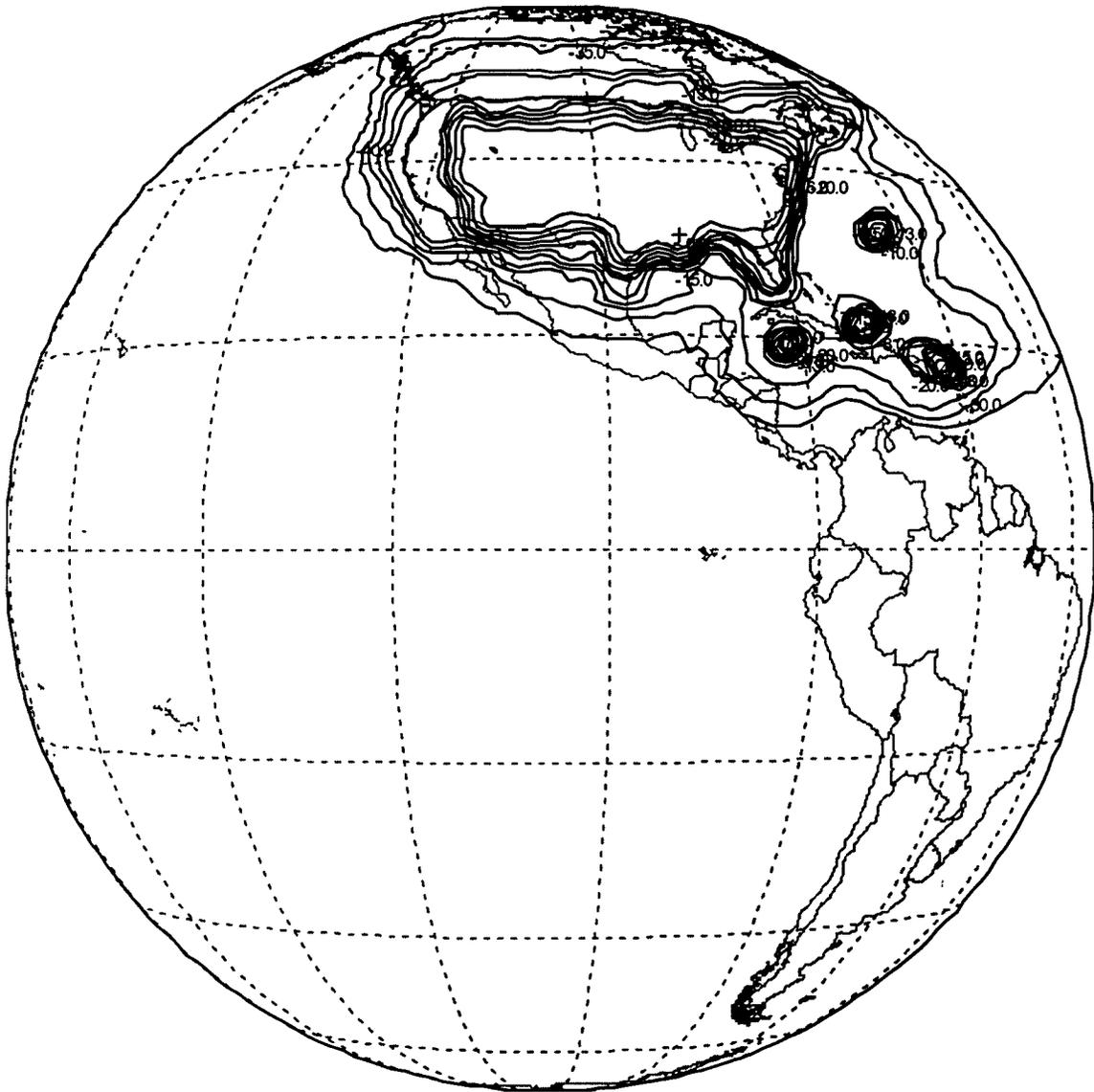


Figure 3. Beam NG1 Co-polar receive satellite antenna gain contours (-2, -4, -6, -8, -10, -13, -15, -20, -30, -35, -40 dB).

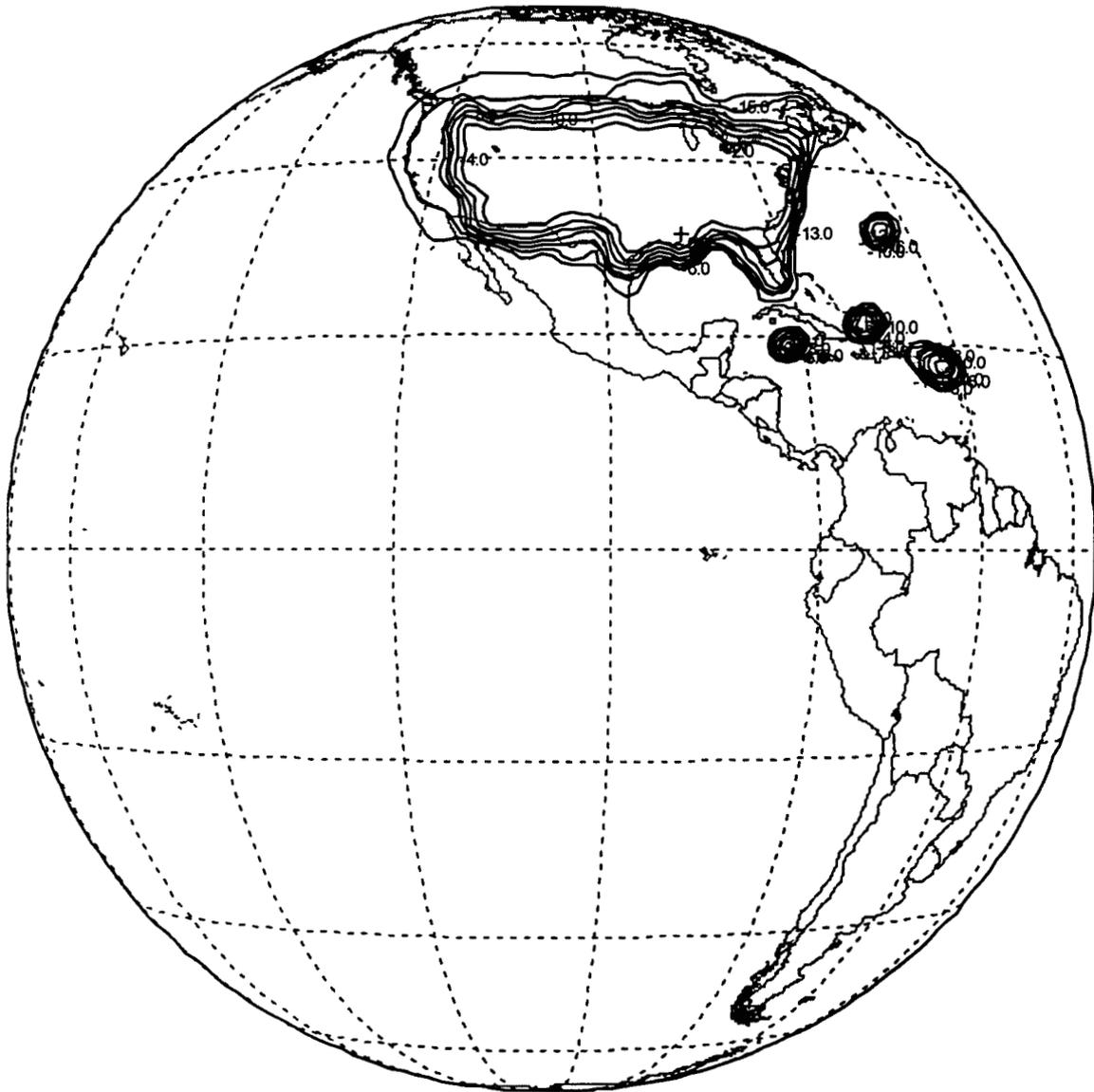


Figure 4. Beam NG1 Cross-polar receive satellite antenna gain contours (-2, -4, -6, -8, -10, -13, -15 dB).

Annex B to Technical Appendix

Analysis of USAT-S1 with respect to the sharing criteria in ANNEX 1 (mod WRC-2000) of Appendix 30

Annex 1⁸ of Appendix 30 contains limits for determining whether a service of an administration is potentially affected by a proposed modification to the Region 2 Plan or by a proposed new or modified assignment in the Regions 1 and 3 List. If an administration's service is identified as potentially affected, coordination is required with that Administration, pursuant to Article 4 of Appendix 30. Each Section of Annex 1 is re-printed below, followed by analysis with respect to USAT-S1.

1 Limits for the interference into frequency assignments in conformity with the Regions 1 and 3 Plan or with the Regions 1 and 3 List or into new or modified assignments in the Regions 1 and 3 List

Under assumed free-space propagation conditions, the power flux-density of a proposed new or modified assignment in the List shall not exceed the value of -103.6 dB(W/(m² · 27 MHz)).

With respect to § 4.1.1 *a)* or *b)* of Article 4, an administration in Region 1 or 3 shall be considered by the Bureau as being affected if the minimum orbital spacing between the wanted and interfering space stations, under worst-case station-keeping conditions, is less than 9°.

However, an administration shall not be considered as affected if either of the following two conditions are met:

- a)* under assumed free-space propagation conditions, the power flux-density at any test point within the service area associated with any of its frequency assignments in the Plan or in the List or for which the procedure of Article 4 has been initiated, does not exceed the following values:⁹

⁸ With respect to this Annex, except for Section 2, the limits relate to the power flux-density which would be obtained assuming free-space propagation conditions. With respect to Section 2 of this Annex, the limit specified relates to the overall equivalent protection margin calculated in accordance with § 2.2.4 of Annex 5.

⁹ For the protection of analogue assignments brought in service before 17 October 1997, the following values shall be used until 1 January 2015:

$$\begin{array}{ll} -147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))} & \text{for } 0^\circ \leq \theta < 0.44^\circ \\ -138 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))} & \text{for } 0.44^\circ \leq \theta < 9^\circ. \end{array}$$

$-147 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $0^\circ \leq \theta < 0.245^\circ$
$-134.8 + 20 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $0.245^\circ \leq \theta < 1.7^\circ$
$-135 + 1.66 \theta^2 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $1.7^\circ \leq \theta < 3.6^\circ$
$-127.5 + 25 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $3.6^\circ \leq \theta < 9^\circ$

where θ corresponds to the minimum geocentric angular separation taking into account the pertinent station-keeping accuracy of the interfering broadcasting-satellite service and the interfered-with broadcasting-satellite service space stations;

b) the effect of the proposed new or modified assignments in the List is that the equivalent downlink protection margin corresponding to a test point of its assignment in the Regions 1 and 3 Plan or List, or for which the procedure of Article 4 has been initiated, including cumulative effect of any previous modification to the List or any previous agreement, does not fall more than 0.45 dB below 0 dB or, if already negative, more than 0.45 dB below the value resulting from:

- the Regions 1 and 3 Plan and List as established by WRC-2000; *or*
- a proposed new or modified assignment to the List in accordance with this Appendix; *or*
- a new entry in the Regions 1 and 3 List as a result of successful application of Article 4 procedures.

NOTE – In performing the calculation, the effect at the receiver input of all the co-channel and adjacent-channel signals is expressed in terms of one equivalent co-channel interfering signal. This value is usually expressed in decibels.

USAT-S1 Analysis: This provision is not applicable to modifications to the Region 2 Plan.

2 Limits to the change in the overall equivalent protection margin for frequency assignments in conformity with the Region 2 Plan

With respect to § 4.2.3 c) of Article 4, an administration in Region 2 shall be considered as being affected if the overall equivalent protection margin corresponding to a test point of its entry in the Region 2 Plan, including the cumulative effect of any previous modification to that Plan or any previous agreement, falls more than 0.25 dB below 0 dB, or, if already negative, more than 0.25 dB below the value resulting from:

- the Region 2 Plan as established by the 1983 Conference; *or*
- a modification of the assignment in accordance with this Appendix; *or*
- a new entry in the Region 2 Plan under Article 4; *or*
- any agreement reached in accordance with this Appendix.

USAT-S1 analysis: An MSPACE analysis was performed of USAT-S1 with respect to the latest version of the ITU Region 2 MSPACE input file (dated: May 31, 2001) with MSPACE version 1.964 (August 2001).¹⁰ This file included four US modifications to the Plans--USABSS-1, -2, -2A (at 101 W.L.¹¹) and -3 (at 119 W.L.). The result of this analysis is that no Plan assignments or proposed modifications to the Plan are affected (i.e., any decrease in overall equivalent protection margin, "OEPM", defined as the MSPACE calculated aggregate C/I minus the Region 2 protection ratio of 28 dB, is less than 0.25 dB).

Several US modifications to the Plan have been filed at the ITU but not yet published (and therefore not included in the current Region 2 MSPACE file), and such information was recently made publicly available by the ITU. Using this new information, a second MSPACE analysis was performed with the addition of beams for the following networks that were filed at the ITU ahead of USAT-S1: USABSS-1R (101 W.L.), USABSS-1M (110 W.L.), USABSS-5 (110 W.L.) and USABSS-6 (110 W.L.). The parameters of the networks submitted to the ITU, now available through the ITU in advance of their official Special Section publication, were used in the analysis.

The results indicated that the USABSS-1M network at 110 W.L. was potentially affected by an exceedance of the OEPM criteria ranging from 0.07 to 1.13 dB depending on the channel and test point concerned. Only two of the 18 test points specified for USABSS-1M showed a decrease in OEPM of more than 1 dB. For USABSS-1R at 101 W.L., the results indicated that network was potentially affected by an exceedance of the OEPM criteria ranging from 0.07 to 0.99 dB depending on the channel and test point concerned. For USABSS-5 at 110 W.L., the results indicated that the network was potentially affected by an exceedance of the criteria of up to 1.38 dB depending on the channel and test point concerned. For USABSS-6 at 110 W.L., the results indicated that network was potentially affected by an exceedance of the criteria of up to 1.08 dB depending on the channel and test point concerned.

With respect to the impact to USABSS-5 and -6, the analysis was performed with respect to Phase 2 of these networks, where more than one satellite is operating at 110 W.L. (not

¹⁰ Another version of MSPACE and a new input file for Region 2 were released by the ITU on April 16, 2002. Although it would have been difficult to re-run all the analysis with this new software prior to filing a week later, an attempt was made to run the new software. It turned out to be impossible to run with the current version of GIMS (GIMS is necessary to analyze networks employing shaped beams). Accordingly, the previous version of MSPACE was used in the analysis presented herein. With respect to the new version of the Region 2 Plan, it was revised mainly to include additional INTELSAT networks at 56 W or further from USAT-S1, and was therefore the changes are not considered crucial to the present analysis.

¹¹ Throughout this text, the nominal orbit location is indicated for each network. However, the MSPACE analysis used the specific orbit location that the modification to the Plan requested, also taking into account the specified station-keeping tolerance.

including USABSS-1M) Currently, USABSS-5, along with USABSS-1M, are the only networks at 110 W.L. However, EchoStar 8 and New EchoStar 1 have been applied for at the FCC to operate at 110 W.L. and one of these satellites will be ultimately located at 110 W.L. At that time, USABSS-5 or –6, whichever network is also at 110 W.L., will be operating in Phase 2. This is the operational scenario that should be considered when evaluating USAT-S1, as USAT-S1 will be operational in the future after deployment of additional satellite(s) to 110 W.L.

With respect to the potentially affected networks, SES AMERICOM will work with the UK Administration to coordinate with these networks in accordance with Appendices 30 and 30A.

As described in the body of the Petition, the FCC has already licensed various U.S. DBS systems that exceed the levels in Annex 1. Some of these systems that have been licensed were filed at the ITU after USAT-S1 (e.g., USABSS-13/DIRECTV 4S, USABSS-14/EchoStar 7). In order to assess the impact of these systems on USAT-S1, another MSPACE analysis was performed with respect to several of the spot beams in the USABSS-13 network (DIRECTV 4S), using the pre-published information recently made available by the ITU. The results show that USABSS-13 exceeds the OEPM criteria with respect to the USAT-S1 network and a Canadian network. Therefore, coordination will be required with the UK Administration for this and possibly other US networks.

3 Limits to the change in the power flux-density to protect the broadcasting-satellite service in Regions 1 and 2 in the band 12.2-12.5 GHz and in Region 3 in the band 12.5-12.7 GHz

With respect to § 4.1.1 c) of Article 4, an administration in Region 2 shall be considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in exceeding the power flux-densities given below, at any test point in the service area affected.

With respect to § 4.2.3 a), 4.2.3 b) or 4.2.3 f) of Article 4, as appropriate, an administration in Region 1 or 3 shall be considered as being affected if the proposed modification to the Region 2 Plan would result in exceeding the power flux-densities given below, at any test point in the service area affected:

$$\begin{array}{ll}
 -147 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz})) & \text{for } 0^\circ \leq \theta < 0.44^\circ \\
 -138 + 25 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz})) & \text{for } 0.44^\circ \leq \theta < 19.1^\circ \\
 -106 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz})) & \text{for } \theta \geq 19.1^\circ
 \end{array}$$

where θ is:

- the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 1 or 3 and the broadcasting-satellite space station affected in Region 2, or

- *the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 2 and the broadcasting-satellite space station affected in Region 1 or 3.*

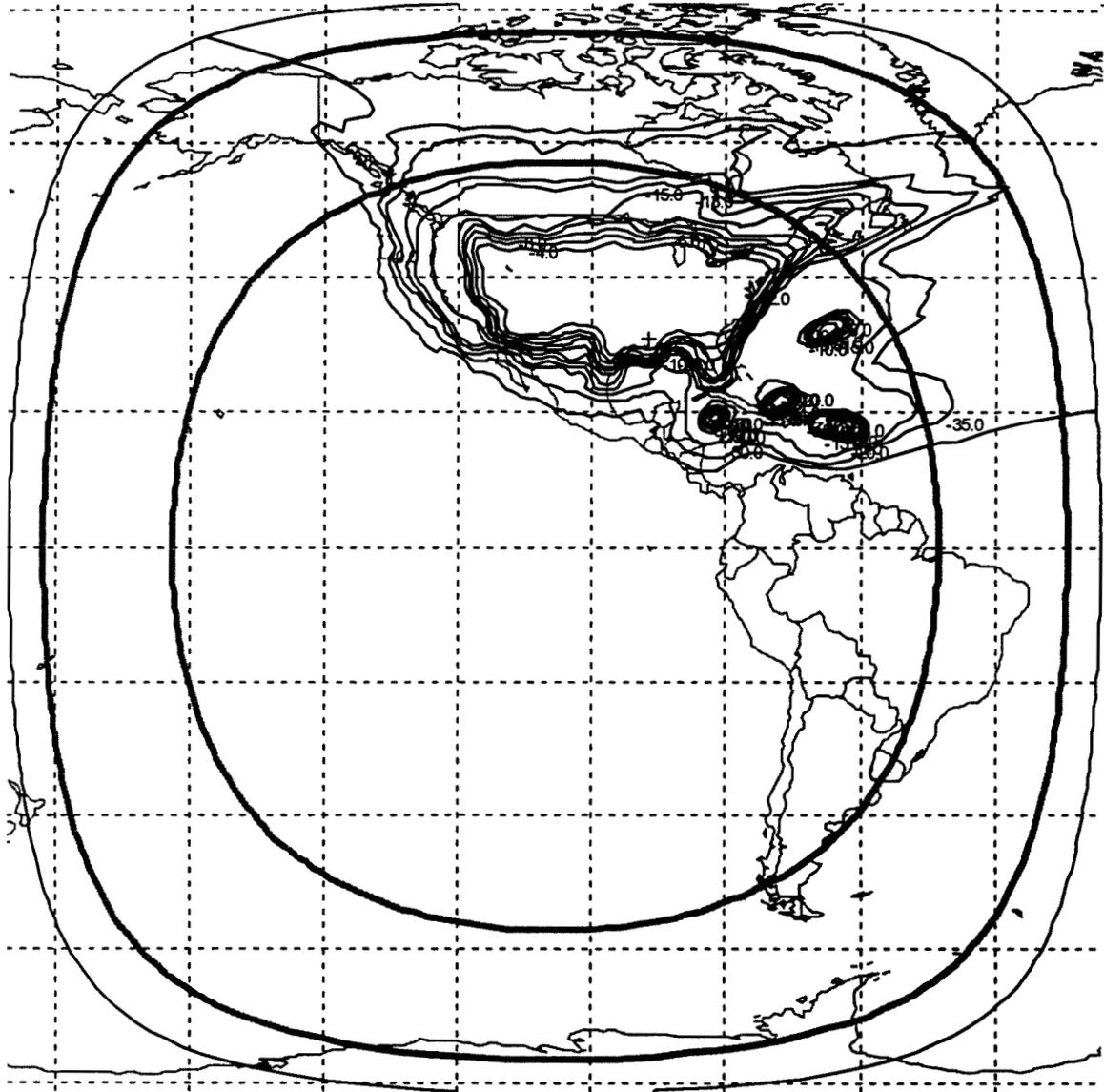
USAT-S1 analysis: The italicized limits are applicable to USAT-S1, as a modification of the Region 2 Plan.

With respect to BSS in Region 1 in 12.2-12.5 GHz, the closest Region 1 BSS Plan or List assignment or proposed modification to the List (per Plan and Space Network List, 3/5/02) is 37.2 W.L. or 150 W.L. The orbital separation between USAT-S1 and these assignments is greater than 19.1 degrees, so the -106 dBW/m²/27 MHz level applies. Figure 1 shows that assuming a minimum antenna discrimination towards Regions 1 or 3 of 30 dB is a conservative assumption. As shown in the following Table, the maximum pfd towards Regions 1 or 3 territories is -138 dBW/m²/27 MHz, which is well below the trigger level.

Max Pfd towards R 1/3 territories	
Max Power (dBW/24 MHz)	18.90
Max Satellite Antenna Gain (dBi)	35.10
Min Antenna Discrimination	30.00
Min Spreading Loss (dBW m ²)	162.07
Max eirp towards R1/3 (dBW/27 MHz)	24.00
Max pfd (dBW/m ² /27 MHz)	-138.07

With respect to BSS in Region 3 in 12.5-12.7 GHz, according to the Space Network List (3/5/02) the closest filing is located at 164 E.L. The orbital separation between USAT-S1 and this assignment is greater than 19.2 degrees. Therefore, the -106 dBW/m²/27 MHz level applies. Again, Figure 1 shows that assuming a minimum antenna discrimination towards Regions 1 or 3 of 30 dB is a conservative assumption. From the previous paragraph, the maximum pfd of USAT-S1 is -138 dBW/m²/27 MHz, which is well below the trigger level.

Figure 1. Beam NG1 satellite transmit antenna gain contours (-2, -4, -6, -8, -10, -13, -15, -20, -25, -30, -35, -40 dB) with 5 and 25 degree elevation angle contours.



4 Limits to the power flux-density to protect the terrestrial services of other administrations^{12, 13, 14}

With respect to § 4.1.1 *d*) of Article 4, an administration in Region 1, 2 or 3 shall be considered as being affected if the consequence of the proposed modified assignment in the Regions 1 and 3 List is to increase the power flux-density arriving on any part of the territory of that administration by more than 0.25 dB over that resulting from that frequency assignment in the Plan or List for Regions 1 and 3 as established by WRC-2000. The same administration shall be considered as not being affected if the value of the power flux-density anywhere in its territory does not exceed the limits expressed below.

With respect to § 4.2.3 *d*) of Article 4, an administration in Region 1, 2 or 3 shall be considered as being affected if the consequence of the proposed modification to an existing assignment in the Region 2 Plan is to increase the power flux-density arriving on any part of the territory of that administration by more than 0.25 dB over that resulting from that frequency assignment in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference. The same administration shall be considered as not being affected if the value of the power flux-density anywhere in its territory does not exceed the limits expressed below.

With respect to § 4.1.1 *d*) or § 4.2.3 *d*) of Article 4, an administration in Region 1, 2 or 3 shall be considered as being affected if the proposed new assignment in the Regions 1 and 3 List, or if the proposed new frequency assignment in the Region 2 Plan, would result in exceeding a power flux-density, for any angle of arrival, at any point on its territory, of:

$$\begin{array}{lll} -148 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))} & \text{for} & \theta \leq 5^\circ \\ -148 + 0.5 (\theta - 5) \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))} & \text{for} & 5^\circ < \theta \leq 25^\circ \\ -138 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))} & \text{for} & 25^\circ < \theta \leq 90^\circ \end{array}$$

where θ represents the angle of arrival.

USAT-S1 analysis:

Region 2 territories:

Pursuant to Section 4.2.3d) of Article 4, these pfd limits are only applicable on portions of the territory of administrations who do not have assignments in the Region 2 BSS Plan

¹² See § 3.18 of Annex 5.

¹³ In the band 12.5-12.7 GHz in Region 1, these limits are applicable only to the territory of administrations mentioned in Nos. 5.494 and 5.496.

¹⁴ See Resolution 34.

on the channel considered to the portion of their territory considered. As Mexico and Canada have Plan assignments on all 32 channels throughout their territory, these pfd limits do not apply to Mexican and Canadian territories.

For other Region 2 territories, only south-eastern portions of South America have elevation angle of less than 25 degrees to the satellite. See Figure 1. In these territories, checking if the most stringent level of $-148 \text{ dBW/m}^2/4\text{kHz}$ is met will ensure the pfd mask is met. This part of South America is outside the -35 dB contour of the satellite. As shown in the following Table, the max pfd level is therefore approximately $-181 \text{ dBW/m}^2/4 \text{ kHz}$, which is well below the -148 level.

Max Pfd towards R 2 territories with elevation angles of 5 degrees or less	
Max power spectral density (dBW/Hz)	-54.90
Max Satellite Antenna Gain (dBi)	35.10
Min Antenna Discrimination	35.00
Min Spreading Loss (dBW m ²)	162.07
Max eirp (dBW/4 kHz)	-18.78
Max pfd (dBW/m ² /4 kHz)	-180.85

For Region 2 territories other than Canada and Mexico, that are within the 25 degree elevation angle contour, the pfd level of $-138 \text{ dBW/m}^2/4 \text{ kHz}$ applies. In these areas, the max worst case (assuming no satellite antenna gain discrimination) pfd level is $-146 \text{ dBW/m}^2/4 \text{ kHz}$. This meets the trigger level.

Max Pfd towards R 2 territories with elevation angles of 25 degrees or greater	
Max power spectral density (dBW/Hz)	-54.90
Max Satellite Antenna Gain (dBi)	35.10
Min Antenna Discrimination	0.00
Min Spreading Loss	162.07
Max eirp (dBW/4 kHz)	16.22

Max pfd (dBW/m ² /4 kHz)	-145.85
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Regions 1 and 3 territories:

All territories in Regions 1 and 3 are at levels below the -30 dB contour of the satellite antenna gain pattern. Therefore, the worst case pfd in Regions 1 or 3 is -176 dBW/m²/4 kHz, which is well below the lowest trigger level of -148 dBW/m²/4 kHz.

5 (Not used.)

6 Limits to the change in the power flux-density of assignments in the Regions 1 and 3 Plan to protect the fixed-satellite service (space-to-Earth) in the band 11.7-12.2 GHz in Region 2 or in the band 12.2-12.5 GHz in Region 3, and of assignments in the Region 2 Plan to protect the fixed-satellite service (space-to-Earth) in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3

With respect to § 4.1.1 *e*) of Article 4, an administration in Region 2 or Region 3 shall be considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in an increase in the power flux-density on its territory of 0.25 dB or more above that resulting from the frequency assignments in the Plan or List for Regions 1 and 3 as established by WRC-2000.

With respect to § 4.2.3 *e*), an administration in Region 1 or 3 shall be considered as being affected if the proposed modification to the Region 2 Plan would result in an increase in the power flux-density on its territory of 0.25 dB or more above that resulting from the frequency assignments in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference.

With respect to § 4.1.1 *e*) of Article 4, where a proposed new or modified assignment in the Regions 1 and 3 List gives a power flux-density of less than $-138 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))^{21}$ anywhere in the territory of an administration of Region 2 or Region 3, that administration shall be considered as not being affected. With respect to § 4.2.3 *e*) of Article 4, where a proposed modification to the Region 2 Plan gives a power flux-density of less than $-160 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz}))^{15}$ anywhere in the territory of an administration of Region 1 or 3, that administration shall be considered as not being affected. *[End of Section 6]*

¹⁵ In place of these values, the values given in the Annex to Resolution 540 (WRC-2000) shall be applied by administrations and the Bureau until this section is revised by a subsequent conference.

Pursuant to Resolution 540 (WRC-2000), the following levels apply in replace of the above levels contained in Section 6:

For interference caused by Region 2 BSS to Regions 1 and 3 FSS (space-to-Earth in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3):

-160 dB(W/(m ² 27 MHz))	for 0° ≤ θ < 0.054°
-137.46 + 17.74 log θ dB(W/(m ² 27 MHz))	for 0.054° ≤ θ < 3.67°
-141.56 + 25 log θ dB(W/(m ² 27 MHz))	for 3.67° ≤ θ < 11.54°
-115 dB(W/(m ² 27 MHz))	for 11.54° ≤ θ

where θ corresponds to the minimum geocentric angular separation between the interfering BSS and the interfered-with FSS space station.

USAT-S1 analysis: All FSS networks serving Regions 1 and 3 in these frequency bands are more than 11.54 degrees from 105.5. W.L. Therefore, the level of -115 dBW/m2/27 MHz applies. As shown in Figure 1 and the following Table, the minimum USAT-S1 antenna discrimination towards Regions 1 and 3 is -30 dB and the maximum pfd towards Regions 1 or 3 territories is -138 dBW/m2/27 MHz, which is well below the trigger level of -115 dBW/m2/27 MHz.

Max Pfd towards R 1/3 territories	
Max power spectral density (dBW/Hz)	-54.90
Max Satellite Antenna Gain (dBi)	35.10
Min Antenna Discrimination	30.00
Min Spreading Loss (dBW m2)	162.07
Max eirp towards R1/3 (dBW/27 MHz)	24.00
Max pfd (dBW/m2/27 MHz)	-138.07

7 Limits to the change in equivalent noise temperature to protect the fixed-satellite service (Earth-to-space) in Region 1 from modifications to the Region 2 Plan in the band 12.5-12.7 GHz

With respect to § 4.2.3 e) of Article 4, an administration of Region 1 shall be considered as being affected if the proposed modification to the Region 2 Plan would result in:

- the value of $\Delta T/T$ resulting from the proposed modification is greater than the value of $\Delta T/T$ resulting from the assignment in the Region 2 Plan as of the date of entry into force of the Final Acts of the 1985 Conference; *and*
- the value of $\Delta T/T$ resulting from the proposed modification exceeds 4%, using the method of Appendix 8 (Case II).

USAT-S1 analysis: ITU databases (SRS, SNS) do not contain any networks in the 12.5-12.7 GHz band, in the Earth-to-space direction. Therefore, USAT-S1 cannot affect any networks, and no further analysis is needed to confirm compliance with this provision.

Annex C to Technical Appendix

Analysis of USAT-S1 with respect to the sharing criteria in ANNEX 1 (mod WRC-2000) of Appendix 30A

Annex 1 of Appendix 30A contains limits for determining whether a service of an administration is considered to be potentially affected by a proposed modification to the Region 2 feeder-link Plan or by a proposed new or modified assignment in the Regions 1 and 3 feeder-link Lists. If an Administration's service is identified as potentially affected, coordination is required, pursuant to Article 4 of Appendix 30A. Each section of Annex 1 is re-printed below, followed by analysis with respect to USAT-S1.

1 (SUP - WRC-2000)

2 (SUP - WRC-2000)

3 Limits to the change in the overall equivalent protection margin with respect to frequency assignments in conformity with the Region 2 feeder-link Plan (WRC-2000)

With respect to the modification to the Region 2 feeder-link Plan and when it is necessary under this Appendix to seek the agreement of any other administration of Region 2, except in cases covered by Resolution 42 (**Rev.Orb-88**), an administration shall be considered affected if the overall equivalent protection margin corresponding to a test point of its entry in that Plan, including the cumulative effect of any previous modification to that Plan or any previous agreement, falls more than 0.25 dB below 0 dB, or, if already negative, more than 0.25 dB below the value resulting from:

- the feeder-link Plan as established by the 1983 Conference; *or*
- a modification of the assignment in accordance with this Appendix; *or*
- a new entry in the feeder-link Plan under Article 4; *or*
- any agreement reached in accordance with this Appendix except for Resolution 42 (**Rev.Orb-88**). (WRC-2000)

USAT-S1 analysis: The results of the MSPACE analyses performed are provided above under Section 2 of Annex 1 of Appendix 30 in Annex B.

With respect to the potentially affected networks, SES AMERICOM will work with the UK Administration to coordinate with these networks in accordance with Appendices 30 and 30A. While this criteria is technical exceeded because it is an overall calculation (up and downlink treated in the same analysis), the downlink, because of the small user terminals, is the driving factor; the uplink, because of the small number of large feeder link earth stations, is not.

4 Limits to the interference into frequency assignments in conformity with the Regions 1 and 3 feeder-link Plan or with the Regions 1 and 3 feeder-link Lists or proposed new or modified assignments in the Regions 1 and 3 feeder-link Lists (WRC-2000)

Under assumed free-space propagation conditions, the power flux-density of a proposed new or modified assignment in the feeder-link Lists shall not exceed the value of -76 dB ($W/(m^2 \cdot 27$ MHz)) at any point in the geostationary-satellite orbit, and the relative off-axis e.i.r.p. of the associated feeder-link antenna shall be in compliance with Fig. A (WRC-97 curves) of Annex 3. (WRC-2000)

With respect to § 4.1.1 *a)* or *b)* of Article 4, an administration in Region 1 or 3 shall be considered by the Bureau as being affected if the minimum orbital spacing between the wanted and interfering space stations, under worst-case station-keeping conditions, is less than 9° . (WRC-2000)

However, an administration shall not be considered as affected if, under assumed free-space propagation conditions, the effect of the proposed new or modified assignments in the feeder-link Lists is that the feeder-link equivalent protection margin corresponding to a test point of its assignment in the feeder-link Plan or the feeder-link Lists or for which the procedure of Article 4 has been initiated, including the cumulative effect of any previous modification to the feeder-link Lists or any previous agreement, does not fall more than 0.45 dB below 0 dB, or, if already negative, more than 0.45 dB below the value resulting from:

- the Regions 1 and 3 feeder-link Plan and Lists as established by WRC-2000; *or*
- a proposed new or modified assignment to the feeder-link Lists in accordance with this Appendix; *or*
- a new entry in the Regions 1 and 3 feeder-link Lists as a result of the successful application of Article 4 procedures. (WRC-2000)

For a proposed new or modified assignment to the feeder-link Lists, in the interference analysis, for each test point, the antenna characteristics described in § 3.5 of Annex 3 shall apply. (WRC-2000)

USAT-S1 analysis: This provision is not applicable to modifications to the Region 2 Plan.

5 Limits applicable to protect a frequency assignment in the bands 17.3-18.1 GHz (Regions 1 and 3) and 17.3-17.8 GHz (Region 2) to a receiving space station in the fixed-satellite service (Earth-to-space)

An administration in Region 1 or 3 shall be considered affected by a proposed modification in Region 2 or an administration in Region 2 shall be considered affected by a proposed new or modified assignment in the Regions 1 and 3 feeder-link Lists when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link would cause an increase in the noise temperature of the feeder-link space station which exceeds the threshold value of $\Delta T/T$ corresponding to 3%, where $\Delta T/T$ is calculated in accordance with the method given in Appendix 8, except that the maximum power densities per hertz averaged over the worst 1 MHz are replaced by power densities per hertz averaged over the total RF bandwidth of the feeder-link carriers (24 MHz for Region 2 and 27 MHz for Regions 1 and 3). (WRC-2000)

Interim systems of Region 2 in accordance with Resolution 42 (Rev.Orb-88) shall not be taken into consideration when applying this provision to proposed modifications to the Regions 1 and 3 feeder-link Plan. However, this provision shall be applied to Region 2 interim systems with respect to the Regions 1 and 3 feeder-link Plan. (WRC-2000)

USAT-S1 analysis: With respect to Regions 1 and 3 Plan assignments, a $\Delta T/T$ analysis was performed with respect to WRC-2000 assignments most likely to have the highest $\Delta T/T$ from USAT-S1. Specifically, assignments located between 150 and 162.5 degrees away from 105.5 W.L.—close to the limb of the Earth as seen from 105.5 W—(from 44.5 E.L. to 57 E.L. and from 92 E.L. to 104.5 E.L.), and those assignments closest to 105.5 W.L (from 160 to 178 W.L., and from 37.2 to 36.8 W.L.), were examined. In the analysis, the satellite receive noise temperature given in Annex 3 of Appendix 30A was used (this value was updated at WRC-97). In addition, the worst case assumption of no discrimination from the receive satellite antenna was assumed. The resulting $\Delta T/T$ was well below the 3 % criteria, as shown in the following table.

Admin	Plan assignment Beam ID	Orbital Position (°)	Plan assignment space station antenna gain (dB)	Satellite receiver discrimination towards interferor (dB)	Receiving noise temperature (K)	USAT-S1 discrimination towards wanted satellite receiver (dB)	$\Delta T/T$ (%)
EST	EST06100	44.5	48.42	0	900	20	0.0052
AFG	AFG24501	50	40.93	0	900	20	0.0009
AFG	AFG24502	50	40.93	0	900	20	0.0009
CLN	CLN21900	50	45.95	0	900	20	0.0029
KGZ	KGZ07000	50	44.75	0	900	20	0.0022
MDA	MDA06300	50	48.88	0	900	20	0.0056
MLD	MLD30600	50	48.88	0	900	20	0.0056
POL	POL13200	50	45.59	0	900	20	0.0026
ROU	ROU13600	50	45.15	0	900	20	0.0024
TKM	TKM06800	50	40.81	0	900	20	0.0009
UAE	UAE27400	52.5	44.31	0	900	20	0.0019
BIH	BIH14800	56	48.88	0	900	20	0.0055
IND	INDA_100	56	45.66	0	900	20	0.0026
IND	INDB_100	56	43.13	0	900	20	0.0015
RUS	RSTRSD21	56	38.4	0	900	20	0.0005
RUS	RSTRSD22	56	38.4	0	900	20	0.0005
KAZ	KAZ06600	56.4	35.38	0	900	20	0.0002
CHN	CHN16000	92.2	31.44	0	900	20	0.0001
CHN	CHN16100	92.2	31.44	0	900	20	0.0001
PHL	PHL28500	98	36.6	0	900	20	0.0003
THA	THA14200	98	37.38	0	900	20	0.0004
BRM	BRM29800	104	37.02	0	900	20	0.0004
INS	INS03501	104	29.48	0	900	20	0.0001
INS	INS03502	104	29.48	0	900	20	0.0001
FJI	FJI19300	-178	44.16	0	900	20	0.0052
SMO	SMO05700	-178	48.88	0	900	20	0.0154
F	OCE10100	-160	32.58	0	900	20	0.0006
IRL	IRL21100	-37.2	48.08	0	900	20	0.0142
NGR	NGR11500	-37.2	38.47	0	900	20	0.0016
AND	AND34100	-37	48.88	0	900	20	0.0170
GMB	GMB30200	-37	47.69	0	900	20	0.0130
GUI	GUI19200	-37	42.29	0	900	20	0.0037
POR	POR_100	-37	47.17	0	900	20	0.0115
MTN	MTN_100	-36.8	37.55	0	900	20	0.0012
SMR	SMR31100	-36.8	48.88	0	900	20	0.0170

With respect to assignments on the Regions 1 and 3 list, or proposed additions to the List, assignments on Sections 13, 14 and 15 of the Space Network List (dated 3/5/02) were considered, in the same orbital ranges as for the Regions 1 and 3 Plan assignments. In the analysis, a more conservative value of satellite receive noise temperature than given in Annex 3 of Appendix 30A was used—750 K vs. 900K. In addition, the worst case assumption of no discrimination from the receive satellite antenna was assumed coupled with a satellite receive on axis gain of 48 dBi, which is the close to the maximum found

in any Plan assignment. The resulting $\Delta T/T$ was well below the 3 % criteria, as shown in the following table.

Network ID	Admin	Organization	Orbital Position (°)	Space station antenna gain	Satellite receiver discrimination towards interferor (dB)	Receiving noise temperature (K)	USAT-S1 discrimination towards wanted satellite receiver (dB)	$\Delta T/T$ (%)
EUTELSAT B-37.2W	F	EUT	-37.2	48	0	750	20	0.0168
UKDIGISAT-1	G		-33.5	48	0	750	20	0.0153
UKDIGISAT-2	G		-33.5	48	0	750	20	0.0153
HISPASAT-2	E		-31	48	0	750	20	0.0144
EUROPE*STAR-1B	D		45	48	0	750	20	0.0056
EUROPE*STAR-2G-1B	D		45	48	0	750	20	0.0056
BIFROST-46.0E-1	NOR		46	48	0	750	20	0.0056
GE-SATCOM AF2	G	GIB	47	48	0	750	20	0.0056
IRNDBS-3	IRN		47	48	0	750	20	0.0056
EUROPE*STAR-3B	D		47.5	48	0	750	20	0.0056
EUTELSAT B-48E	F	EUT	48	48	0	750	20	0.0056
USASAT-29I	USA		48	48	0	750	20	0.0056
NPLSAT-50E	NPL		50	48	0	750	20	0.0055
SIRIUS-50E	S		50	48	0	750	20	0.0055
BIFROST-50.2E-1	NOR		50.2	48	0	750	20	0.0055
BIFROST-50.2E-2	NOR		50.2	48	0	750	20	0.0055
BULSAT-BSS	BUL		50.4	48	0	750	20	0.0055
EMARSAT-1	UAE		52.5	48	0	750	20	0.0055
BIFROST-53.2E-1	NOR		53.2	48	0	750	20	0.0055
USASAT-29J	USA		54	48	0	750	20	0.0054
RST-2	RUS		56	48	0	750	20	0.0054
NSSBSS-5	HOL		57	48	0	750	20	0.0054
NSSBSS-6	HOL		95	48	0	750	20	0.0054
GE-SATCOM A1	G	GIB	97	48	0	750	20	0.0055
ASIASAT-DTH-E	CHN	HKG	100.5	48	0	750	20	0.0056
ASIASAT-EBS	CHN		100.5	48	0	750	20	0.0056
CBSAT-4	CHN		101	48	0	750	20	0.0056
INSAT-BSS101	IND		101	48	0	750	20	0.0056
PAKSAT-BSS-101E	PAK		101	48	0	750	20	0.0056
USASAT-29K	USA		101	48	0	750	20	0.0056
LSTAR2B	LAO		103	48	0	750	20	0.0056
PALAPA BSS-2	INS		104	48	0	750	20	0.0056
KSAT-1	KOR		104	48	0	750	20	0.0056
USASAT-29O	USA		173	48	0	750	20	0.0124

6 Limits applicable to protect a frequency assignment in the band 17.8-18.1 GHz (Region 2) to a receiving feeder-link space station in the fixed-satellite service (Earth-to-space) (WRC-2000)

An administration in Region 2 shall be considered affected by a proposed new or modified assignment in the Regions 1 and 3 feeder-link Lists when the power flux-density arriving at the Region 2 receiving space station of a broadcasting-satellite feeder-link would cause an increase in the noise temperature of the receiving feeder-link space station which exceeds the threshold value of $\Delta T/T$ corresponding to 3%, where $\Delta T/T$ is calculated in accordance with the method given in Appendix 8, except that the maximum power densities per hertz averaged over the worst 1 MHz are replaced by power densities per hertz averaged over the total RF bandwidth of the feeder-link carriers. (WRC-2000)

USAT-S1 analysis: This provision is not applicable to modifications to the Region 2 Plan.

**CERTIFICATION OF PERSON RESPONSIBLE
FOR PREPARING ENGINEERING INFORMATION
SUBMITTED IN THIS APPLICATION**

I hereby certify that I am a technically qualified person responsible for preparation of the engineering information contained in this Application, that I am familiar with Parts 25 and 100 of the Commission's Rules, that I have either prepared or reviewed the engineering information submitted in this Application, and that it is complete and accurate to the best of my knowledge.

By:



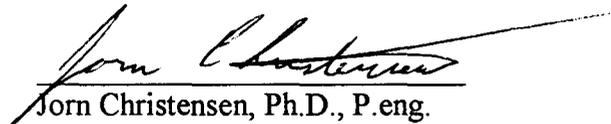
Kimberly M. Baum
Manager, Satellite Market
Development
SES AMERICOM, Inc.

April 25, 2002

**CERTIFICATION OF PERSON RESPONSIBLE
FOR PREPARING ENGINEERING INFORMATION
SUBMITTED IN THIS APPLICATION**

I hereby certify that I am a technically qualified person responsible for preparation of the engineering information contained in this Application, that I am familiar with Parts 25 and 100 of the Commission's Rules, that I have either prepared or reviewed the engineering information submitted in this Application, and that it is complete and accurate to the best of my knowledge.

By:



Jorn Christensen, Ph.D., P.eng.
Consultant
J. Christensen Consultants Ltd.

April 25 2002



Attachment 2

Letter from Gibraltar Regulatory Authority



Gibraltar Regulatory Authority

Suite 811, Europort
Gibraltar

Tel: +350 74636

Fax: +350 72166

e-mail: info@gra.gi

url: <http://www.gra.gi>

Your ref.
Our ref. 182A
Date 22 April 2002

Mr. Donald Abelson, Chief
International Division
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
U.S.A.

Dear Mr. Abelson,

Re: Petition of SES Satellites (Gibraltar) Ltd.

I am writing in connection with the petition of SES Satellites (Gibraltar) Ltd. ("SES (Gibraltar)"), a Gibraltar company, seeking to serve the U.S. market using a satellite to be located at 105.5° W.L., pursuant to a licence issued by the Government of Gibraltar on March 6, 2002. Our understanding is that SES (Gibraltar) intends to use that satellite to provide transponder capacity to third parties ("Direct-to-Home Providers"), who will use that capacity to provide free and subscription television programming (and other services) directly to consumers in their homes in the United States and in certain jurisdictions in the Caribbean.

The Gibraltar Regulatory Authority is the telecommunications regulatory authority of Gibraltar. Although the United Kingdom represents Gibraltar at the International Telecommunication Union, Gibraltar is responsible for domestic licensing issues. Thus, any laws or regulations governing the licensing of satellites, satellite earth stations, and satellite services in Gibraltar are promulgated by the Government of Gibraltar.

I have been informed that the U.S. Federal Communications Commission requires information about the ability of U.S. satellite operators to provide services in Gibraltar similar to those proposed to be provided in the United States by SES Gibraltar. Although I have never received a request from a U.S. satellite operator to provide transponder capacity for the offering of television programming to consumers in Gibraltar, this market in Gibraltar is completely open to U.S. satellite operators.

A satellite operator is not required to obtain a licence from the Gibraltar Regulatory Authority in order to provide capacity to others who provide programming to consumers in Gibraltar. U.S. operators would receive the same treatment as any

European operator in this respect. Therefore, a U.S. satellite operator may provide capacity to Direct-to-Home Providers seeking to offer services in Gibraltar.

Because there is no licensing requirement, there are no applicable Gibraltar laws, or applicable regulations made by Government of Gibraltar. I would be glad to provide further information at your request.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Paul J Canessa', written over a horizontal line.

Paul J Canessa
Chief Executive

FCC Form 312

FCC 312
Main Form

FEDERAL COMMUNICATIONS COMMISSION

APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS

Approved by OMB
3060-0678

Est. Avg Burden Hours
Per Response: 11 Hrs.

FCC Use Only

File Number:

Call Sign:

Fee Number:

APPLICANT INFORMATION

1. Legal Name of Applicant SES AMERICOM, Inc.		2. Voice Telephone Number 609-987-4187	
3. Other Name Used for Doing Business (if any)		4. Fax Telephone Number 609-987-4233	
5. Mailing Street Address or P.O. Box 4 Research Way ATTENTION: Nancy J. Eskenazi		6. City Princeton	
		7. State / Country (if not U.S.A.) NJ	8. Zip Code 08540
9. Name of Contact Representative (if other than applicant) Phillip L. Spector		10. Voice Telephone Number 202-223-7300	
11. Firm or Company Name Paul, Weiss, Rifkind, Wharton & Garrison		12. Fax Telephone Number 202-223-7420	
13. Mailing Street Address or P.O. Box 1615 L Street, N.W., Suite 1300 ATTENTION:		14. City Washington	
		15. State / Country (if not U.S.A.) D.C.	16. Zip Code 20036

CLASSIFICATION OF FILING

17. Place an "X" in the box next to the classification that applies to this filing for both questions a. and b. Mark only one box for 17a and only one box for 17b.

<input type="checkbox"/> a1. Earth Station	<input type="checkbox"/> b1. Application for License of New Station	<input type="checkbox"/> b6. Transfer of Control of License or Registration
<input checked="" type="checkbox"/> a2. Space Station	<input type="checkbox"/> b2. Application for Registration of New Domestic Receive-Only Station	<input type="checkbox"/> b7. Notification of Minor Modification
	<input type="checkbox"/> b3. Amendment to a Pending Application	<input type="checkbox"/> b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
	<input type="checkbox"/> b4. Modification of License or Registration	<input type="checkbox"/> b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
	<input type="checkbox"/> b5. Assignment of License or Registration	<input checked="" type="checkbox"/> b10. Other (Please Specify): Petition for Declaratory Ruling Seeking U.S. market access for foreign-licensed DBS satellite

18. If this filing is in reference to an existing station, enter: Call sign of station: N/A	19. If this filing is an amendment to a pending application enter: (a) Date pending application was filed: N/A	(b) File number of pending application: N/A
----------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------

ALIEN OWNERSHIP

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
30. Is the applicant an alien or the representative of an alien?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit, the identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote. See Exhibits A and B.		

BASIC QUALIFICATIONS

35. Does the applicant request any waivers or exemptions from any of the Commission's Rules? See Exhibit C If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
36. Has the applicant or any party to this application had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
37. Has the applicant, or any party to this application, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceeding two items? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, addresses, and citizenship of those stockholders owning of record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.		
41. By checking Yes, the undersigned certifies, that neither the applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. § 25.137, as appropriate. If no, proceed to question 43.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station? <u>Gibraltar</u>		

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Place an "X" in the box(es) next to all that apply.

a. Fixed Satellite
 c. Radiodetermination Satellite
 e. Direct to Home Fixed Satellite
 b. Mobile Satellite
 d. Earth Exploration Satellite
 f. Digital Audio Radio Service
 g. Other (please specify) Direct Broadcast Satellite Service

21. STATUS: Place an "X" in the box next to the applicable status. Mark only one box.

a. Common Carrier
 b. Non-Common Carrier

22. If earth station applicant, place an "X" in the box(es) next to all that apply. N/A

a. Using U.S. licensed satellites
 b. Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Mark only one box. Are these facilities: N/A

a. Connected to the Public Switched Network
 b. Not connected to the Public Switched Network

24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).

a. C-Band (4/6 GHz)
 b. Ku-Band (12/14 GHz)
 c. Other (Please specify) 12.2-12.7 GHz downlink; 17.3-17.8 GHz feeder link

TYPE OF STATION

25. CLASS OF STATION: Place an "X" in the box next to the class of station that applies. Mark only one box.

a. Fixed Earth Station
 b. Temporary-Fixed Earth Station
 c. 12/14 GHz VSAT Network
 d. Mobile Earth Station
 e. Space Station
 f. Other (Specify) _____

If space station applicant, go to Question 27.

26. TYPE OF EARTH STATION FACILITY Mark only one box.

a. Transmit/Receive
 b. Transmit-Only
 c. Receive-Only
 N/A

PURPOSE OF MODIFICATION OR AMENDMENT

27. The purpose of this proposed modification or amendment is to: Place an "X" in the box(es) next to all that apply.

a -- authorization to add new emission designator and related service
 b -- authorization to change emission designator and related service
 c -- authorization to increase EIRP and EIRP density
 d -- authorization to replace antenna
 e -- authorization to add antenna
 f -- authorization to relocate fixed station
 g -- authorization to change assigned frequency(ies)
 h -- authorization to add Points of Communication (satellites & countries)
 i -- authorization to change Points of Communication (satellites & countries)
 j -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
 k -- Other (Please Specify) _____

N/A

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? YES NO

If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application.

A Radiation Hazard Study must accompany all applications as an exhibit for new transmitting facilities, major modifications, or major amendments. Refer to OET Bulletin 65.

43. Description. (Summarize the nature of the application and the services to be provided).

SES AMERICOM, Inc. requests a declaratory ruling that it is in the public interest for SES AMERICOM, Inc. to offer satellite capacity to third parties that will provide direct-to-home services to consumers in the United States and certain British Overseas Territories in the Caribbean via a satellite licensed by the Government of Gibraltar at 105.5° W.L. for the frequencies 12.2-12.7 GHz (downlink) and 17.3-17.8 GHz (feeder link).

Exhibit No.	Identify all exhibits that are attached to this application.
A	Alien ownership
B	List of Stockholders, Officers and Directors
C	Petition for Declaratory Ruling enclosed herewith

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Place an "X" in the box next to applicable response.)

- a. Individual
 b. Unincorporated Association
 c. Partnership
 d. Corporation
 e. Governmental Entity
 f. Other (Please specify) _____

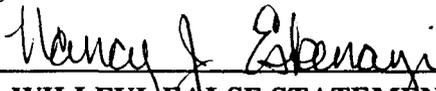
45. Typed Name of Person Signing

Nancy J. Eskenazi

46. Title of Person Signing

Associate General Counsel

47. Signature



48. Date

April 25, 2002

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

EXHIBIT A
Alien Ownership

SES AMERICOM, Inc. ("SES AMERICOM") is a wholly-owned, indirect subsidiary of SES GLOBAL S.A. ("SES GLOBAL"), a Luxembourg company. Non-U.S. citizens hold an economic interest of approximately 69.28% and voting power of approximately 78.96% in SES GLOBAL.

Currently, the identifiable non-U.S. shareholders of SES GLOBAL are:

Deutsche Telekom, A.G. ("Deutsche Telekom"), through two wholly-owned subsidiaries, holds shares of SES GLOBAL, representing an economic interest of 13.15% and voting power of 11.02%. Deutsche Telekom is a corporation organized and existing under the laws of the Federal Republic of Germany, with its headquarters in Bonn. Its principal business is the provision of telecommunications and information services. The Government of Germany and Kreditanstalt fuer Wiederaufbau together own about 45% of Deutsche Telekom.¹ Applying the multiplier effect,² their indirect economic interest in SES GLOBAL is 5.91% and indirect voting power is 4.96%.

Banque et Caisse d'Epargne de l'Etat ("BCEE") and Société Nationale de Crédit et d'Investissement ("SNCI"), each of which is an institution created by act of the Luxembourg Parliament and 100% owned by the State of Luxembourg, own shares of SES GLOBAL, as does the State of Luxembourg. Together, the State and these two institutions own a combined total economic interest of 16.67% and voting power of 34.90% in SES GLOBAL. The principal business of both BCEE and SNCI is financial services.

Eleven non-U.S. companies own in the aggregate an economic interest of 18.59% and hold voting power of 15.56% in SES GLOBAL.³ These companies are:

Dresdner Bank Luxembourg S.A. ("Dresdner Luxembourg") provides international commercial and private banking services. It is 100% owned by Dresdner Bank AG, a German company ("Dresdner"), 95% of which was acquired in 2001 by Allianz, AG, a

¹ See Reply in Support of Applications for Consent to Transfer of Control, Voicestream Wireless Corporation, Powertel, Inc. and Deutsche Telekom A.G., IB Docket 00-187.

² See 47 C.F.R. § 63.09, note 2.

³ The share ownership differs slightly from that previously reported because two companies (TITA S.A. and Compagnie de Financement) no longer hold identifiable interests in SES GLOBAL.

publicly-traded German insurance company. Dresdner and Allianz are incorporated in Germany; Dresdner Luxembourg is incorporated in Luxembourg.⁴

Deutsche Bank Luxembourg S.A. (“Deutsche Bank Luxembourg”) provides international commercial and private banking services. It is 100% owned by Deutsche Bank AG, a German company (“Deutsche Bank”). Deutsche Bank is a multinational company with interests around the world, incorporated in Germany. Deutsche Bank Luxembourg is incorporated in Luxembourg.

Luxempart S.A. (“Luxempart”) and Audiolux S.A. (“Audiolux”) are investment companies with investments in multi-media, bank and energy companies, mainly in Luxembourg. Luxempart owns 67% of Audiolux, and the rest of Audiolux is traded on the Luxembourg stock exchange. Over half the equity of Luxempart is traded on the Luxembourg stock exchange. The remaining equity is held by Groupe Le Foyer (Luxembourg insurance company), Sofina (Belgium investment company), Dexia-BIL (Luxembourg bank) and Fortis Bank (Belgium/Netherlands bank). Luxempart and Audiolux are incorporated in Luxembourg.

Loran Telecommunications S.A. (“Loran”) and Space Equipment S.A. (“Space Equipment”) are affiliated companies, incorporated in Luxembourg. Each of Loran and Space Equipment’s main purpose is to hold shares of SES GLOBAL.

Trufidee S.A. (“Trufidee”) and Sofina S.A. (“Sofina”) are each investment companies. Sofina owns 100% of Trufidee. Over half of Sofina’s equity is traded on the Brussels stock exchange. Trufidee is incorporated in Luxembourg, and Sofina is incorporated in Belgium.

Aachener & Mùchener GB AG (“A&M”) is principally a provider of life and health insurance. A controlling interest is held by an Italian insurance company, Assicurazione Generali S.p.A (“Generali”). A&M is incorporated in Germany and Generali in Italy.

Banque Générale du Luxembourg, S.A. (“BGL”) and BGL Investment Partners S.A. (“BGL Investments”) – BGL provides a broad range of financial services, and BGL Investments (60% owned by BGL) is an entity through which BGL makes investments in Luxembourg. BGL is owned by the Fortis Bank, a Belgium/Netherlands financial services company. BGL and BGL Investments are incorporated in Luxembourg.

In addition, 57 foreign individuals and companies hold shares of SES GLOBAL directly (constituting 0.35% economic interest and 0.29% voting power). The remaining shares

⁴ See General Electric Corporation and SES GLOBAL, S.A., Application for Consent to Transfer Control, Application File No. SAT-T/C-20010402-00030 (filed April 2, 2001), as supplemented by Letters of Phillip L. Spector, Laura B. Sherman, counsel for SES GLOBAL, to Magalie R. Salas, Secretary, FCC, dated September 12, 2001, September 17, 2001 and October 10, 2001, and Letter of Laura B. Sherman, counsel for SES GLOBAL, to Magalie R. Salas, Secretary, FCC, dated October 12, 2001.

of SES GLOBAL are held indirectly through Depositary Receipts traded on the Luxembourg and Frankfurt stock exchanges, aggregating 20.72% of the economic interest and 16.57% of the voting interest.

The non-U.S. ownership interests described in this Exhibit A are consistent with the foreign ownership limitations established by the Commission in its *Order and Supplemental Order* approving the transfer of control of GE American Communications, Inc. to SES GLOBAL.⁵

⁵ General Electric Capital Corporation and SES GLOBAL S.A., *Order and Authorization*, DA 01-2100 (rel. Oct. 2, 2001) (“*Order*”); General Electric Capital Corporation and SES GLOBAL S.A., *Supplemental Order*, DA 01-2482 (rel. Oct. 26, 2001 (“*Supplemental Order*”).

EXHIBIT B
List of Stockholders, Officers and Directors

The applicant, SES AMERICOM, Inc. ("SES AMERICOM"), is an indirect wholly-owned subsidiary of SES GLOBAL S.A. ("SES GLOBAL"). SES GLOBAL's ownership of AMERICOM is achieved through the instrumentality of five subsidiaries of SES GLOBAL. The capital stock of SES AMERICOM is directly held by SES GLOBAL-AMERICAS, Inc., which in turn is owned by SES SUBSIDIARY Inc. 23, SES SUBSIDIARY Inc. 24, SES SUBSIDIARY Inc. 25 and SES SUBSIDIARY Inc. 26. With the exception of SES GLOBAL, all of these companies are U.S. corporations.

SES GLOBAL is a Luxembourg company. Through its subsidiaries and affiliates, SES GLOBAL engages in the provision of satellite services in the Americas, Europe and Asia.

SES GLOBAL has offices at L-6815 Chateau de Betzdorf, Luxembourg. The address of the intermediary holding companies and SES AMERICOM is 4 Research Way, Princeton, NJ 08540.

The directors of SES AMERICOM are Romain Bausch and Dean Olmstead. Mr. Olmstead's address is SES AMERICOM, Inc., 4 Research Way, Princeton, NJ 08540. The address of Mr. Bausch is SES GLOBAL S.A., L-6815 Chateau de Betzdorf, Luxembourg. Mr. Olmstead is an U.S. national and Mr. Bausch is a Luxembourg national.

The officers of SES AMERICOM are

Dean A. Olmstead	President and Chief Executive Officer (elect)
Walter H. Braun	Senior Vice President
Andreas M. Georghiou	Senior Vice President
Emmett B. Hume	Senior Vice President
Anders Johnson	Senior Vice President
Robert Phelan	Senior Vice President
John Repko	Senior Vice President/Chief Information Officer
Carl Capista	Vice President
Daniel J. Harel	Vice President
Richard A. Langhans	Vice President
John A. Nelsen	Vice President
Michael J. Noon	Vice President
Monica Morgan	Vice President
William Berman	Vice President
Michael Agostinelli	Vice President
Orlando Skelton	Vice President
Cynthia Dickins	Vice President
Stanley Konopka	Assistant Treasurer – Taxes
Hanaa Nasr	Assistant Treasurer – Taxes

Mara L. Yoelson	Assistant Secretary
David J. Lidstone	Assistant Secretary
Nancy J. Eskenazi	Assistant Secretary

The address of all the officers, except for Ms. Dickins, is SES AMERICOM, Inc., 4 Research Way, Princeton, NJ 08540. Ms. Dickins' office address is 7200 Wisconsin Avenue, Bethesda, MD 20814-5228. All of the officers, except Ms. Dickins, are U.S. nationals. Ms. Dickins is national of the United Kingdom and Mexico.

The names, addresses, and citizenship of stockholders owning of record and/or voting 10 percent or more of SES GLOBAL's voting stock are:

1. General Electric Capital Corporation ("GE Capital") holds shares of SES GLOBAL, representing an economic interest of 30.72% and voting power of 21.04%. GE Capital is a corporation organized under the laws of New York. GE Capital engages in a broad spectrum of financial services, including distribution, sales financing, commercial and industrial financing, real estate, transportation and reinsurance. GE Capital's address is as follows:

General Electric Capital Corporation
260 Long Ridge Road
Stamford, CT 06927

2. Deutsche Telekom, A.G. ("Deutsche Telekom"), through two wholly-owned subsidiaries, holds shares of SES GLOBAL, representing an economic interest of 13.15% and voting power of 11.02%. Deutsche Telekom is a corporation organized and existing under the laws of the Federal Republic of Germany. Deutsche Telekom and its subsidiaries and affiliates provide a wide range of telecommunications services in Germany and other parts of Europe and the United States. Deutsche Telekom's address is as follows:

Deutsche Telekom, A.G.
Friedrich-Ebert-Allee 140
53113 Bonn, Germany

3. Banque et Caisse d'Epargne de l'Etat ("BCEE") and Société Nationale de Crédit et d'Investissement ("SNCI"), each of which is an institution created by act of the Luxembourg Parliament and 100% owned by the State of Luxembourg, and the State of Luxembourg collectively hold shares of SES GLOBAL, representing a combined total economic interest of 16.67% and voting power of 34.90%. The principal business of both BCEE and SNCI is financial services. The addresses of BCEE and SNCI are as follows:

Banque et Caisse d'Epargne de l'Etat
1, place de Metz
L-2954 Luxembourg

Société Nationale de Crédit et d'Investissement

7, place du St. Esprit
L-1475 Luxembourg

The address for the State of Luxembourg is Ministry of State, 4 rue de la Congrégation, L-2910,
Luxembourg.